

C
M66uZme
1914/15

The University of Minnesota

THE MEDICAL SCHOOL

1914-1915

UNIVERSITY OF ILLINOIS LIBRARY

AUG 17 1917



BULLETIN OF THE UNIVERSITY OF MINNESOTA
VOL. XVII, NO. 8. AUGUST 1914

Entered at the Post-Office
in Minneapolis as second-class matter
Minneapolis, Minn.

The Bulletin of the University of Minnesota is issued as often as twice a month during the University year.

The Bulletin comprises—

Original Series. Containing the reports of the President and of the Board of Regents, the Register, the Bulletin of General Information, the annual announcements of the individual colleges of the University, etc.

General Series. Containing announcements of departments of instruction, reports of University officers, etc.

These bulletins will be sent gratuitously to all persons who apply for them. The applicant should state specifically which bulletin or what information is desired. Address

The REGISTRAR,
The University of Minnesota.
Minneapolis, Minnesota.

Research Publications. Containing results of research work. Papers will be published as separate monographs numbered in several series.

School of Mines Experiment Station Series. Containing results of investigations conducted by the Station.

Current Topics Series. Containing papers of general interest in various lines of work.

These publications are free to residents of the State. To others a small charge is made. They are offered for exchange with institutions publishing similar material. Address

The LIBRARIAN,
The University of Minnesota.
Minneapolis, Minnesota.

The University of Minnesota

THE MEDICAL SCHOOL

1914-1915



BULLETIN OF THE UNIVERSITY OF MINNESOTA
VOL. XVII, NO. 8. AUGUST 1914

Entered at the Post-Office
in Minneapolis as second-class matter
Minneapolis, Minn.

1914							1915													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	..	..	..	1	2	3
5	6	7	8	9	10	11	3	4	5	6	7	8	9	4	5	6	7	8	9	10
12	13	14	15	16	17	18	10	11	12	13	14	15	16	11	12	13	14	15	16	17
19	20	21	22	23	24	25	17	18	19	20	21	22	23	18	19	20	21	22	23	24
26	27	28	29	30	31	..	24	25	26	27	28	29	30	25	26	27	28	29	30	31
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
AUGUST							FEBRUARY							AUGUST						
..	..	..	..	..	..	1	..	1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	..	..	..	..	..	..	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
..	..	1	2	3	4	5	..	1	2	3	4	5	6	..	..	1	2	3	4	..
6	7	8	9	10	11	12	7	8	9	10	11	12	13	5	6	7	8	9	10	11
13	14	15	16	17	18	19	14	15	16	17	18	19	20	12	13	14	15	16	17	18
20	21	22	23	24	25	26	21	22	23	24	25	26	27	19	20	21	22	23	24	25
27	28	29	30	..	..	..	28	29	30	31	..	..	..	26	27	28	29	30	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
OCTOBER							APRIL							OCTOBER						
..	..	..	..	1	2	3	..	..	..	..	1	2	3	..	..	..	..	..	1	2
4	5	6	7	8	9	10	4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..
NOVEMBER							MAY							NOVEMBER						
1	2	3	4	5	6	7	..	..	..	..	..	..	1	..	1	2	3	4	5	6
8	9	10	11	12	13	14	2	3	4	5	6	7	8	7	8	9	10	11	12	13
15	16	17	18	19	20	21	9	10	11	12	13	14	15	14	15	16	17	18	19	20
22	23	24	25	26	27	28	16	17	18	19	20	21	22	21	22	23	24	25	26	27
29	30	..	..	..	..	..	23	24	25	26	27	28	29	28	29	30	..	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
DECEMBER							JUNE							DECEMBER						
..	..	1	2	3	4	5	..	..	1	2	3	4	5	..	..	1	2	3	4	..
6	7	8	9	10	11	12	6	7	8	9	10	11	12	5	6	7	8	9	10	11
13	14	15	16	17	18	19	13	14	15	16	17	18	19	12	13	14	15	16	17	18
20	21	22	23	24	25	26	20	21	22	23	24	25	26	19	20	21	22	23	24	25
27	28	29	30	31	..	..	27	28	29	30	..	..	..	26	27	28	29	30	31	..

UNIVERSITY CALENDAR

1914-1915

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1914

September	1	Tuesday	Registration closes except for new students
September	1-8	Week	Fees payable except for new students
September	8-15	Week	Entrance examinations, examinations for the removal of conditions, registration of new students, and payment of fees
September	9-15	Week	Military encampment of cadets
September	16	Wednesday	First semester begins
November	25	Wednesday	Thanksgiving recess begins 9:00 p.m.
November	30	Monday	Thanksgiving recess ends 8:00 a.m.
December	18	Friday	Christmas vacation begins 9:00 p.m.

1915

January	5	Tuesday	Christmas vacation ends 8:00 a.m.
January	19	Tuesday	Registration for second semester closes
January	25	Monday	Final examinations begin
January	26	Tuesday	Payment of fees for second semester closes
February	3	Wednesday	Second semester begins
February	11	Thursday	First semester class reports due
February	12	Friday	Lincoln's Birthday: a holiday
February	22	Monday	Washington's Birthday: a holiday
March	31	Wednesday	Easter recess begins 9:00 p.m.
April	8	Thursday	Easter recess ends 8:00 a.m.
April	12-17	Week	First semester condition examinations
May	29	Saturday	Final examinations begin
June	5	Saturday	Second semester closes
June	6	Sunday	Baccalaureate service
June	7	Monday	Senior class day exercises
June	9	Wednesday	Alumni Day
June	10	Thursday	Forty-third Annual Commencement
June	11	Friday	Summer vacation begins
June	14	Monday	Summer Session begins

The University year for 1915-16 will begin Tuesday, September 7.

THE DEPARTMENT OF MEDICINE

The Department of Medicine includes the following colleges:

The Medical School

ELIAS POTTER LYON, Ph.D., M.D., Dean

RICHARD OLDING BEARD, M.D., Secretary

The College of Dentistry

ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean

The College of Pharmacy

FREDERICK J. WULLING, Phm.D., LL.M., Dean

Each college is autonomous, has its own faculty and an independent curriculum. The laboratories and staff of the Medical School provide instruction for students in each of the three colleges, as required, in anatomy, physiology and physiologic chemistry, pathology, bacteriology, and pharmacology.

Medical education in the State of Minnesota is unified at the State University.

THE MEDICAL SCHOOL

THE ADMINISTRATIVE BOARD

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President
ELIAS POTTER LYON, Ph.D., M.D., Dean, and Director of the Department of Physiology
RICHARD OLDING BEARD, M.D., Secretary of the Medical School
LOUIS B. BALDWIN, M.D., Superintendent of the University Hospitals
CHARLES LYMAN GREENE, M.D., Chief of the Department of Medicine
JAMES E. MOORE, M.D., Chief of the Department of Surgery
CLARENCE MARTIN JACKSON, M.S., M.D., Director of the Department of Anatomy
JENNINGS C. LITZENBERG, B.S., M.D., Chief of the Department of Obstetrics
ARTHUR D. HIRSCHFELDER, B.S., M.D., Director of the Department of Pharmacology
HAROLD E. ROBERTSON, B.A., M.D., Acting Director of the Department of Pathology, Bacteriology, and Public Health
FRED LYMAN ADAIR, B.S., M.D., Member-Elect, Representing the Faculty

FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President 1005 5th St. S. E.
CYRUS NORTHROP, LL.D., President, Emeritus 519 10th Ave. S. E.
AMOS W. ABBOTT, M.D., Emeritus Professor of Gynecology 1717 Marquette Ave.
EVERTON J. ABBOTT, B.A., M.D., Emeritus Professor of Clinical Medicine 425 Dayton Ave., St. Paul
JOHN W. BELL, M.D., Emeritus Professor of Clinical Medicine and Physiological Diagnosis 5127 Lake Harriet Blvd.
CHARLES A. WHEATON, M.D., Emeritus Professor of Surgery 329 Summit Ave., St. Paul
C. EUGENE RIGGS, M.A., M.D., Emeritus Professor of Mental and Nervous Diseases 10 Crocus Hill, St. Paul
JAMES T. CHRISTISON, M.D., Emeritus Professor of Pediatrics 535 Lowry Bldg., St. Paul

-
- F. L. ADAIR, B.S., M.D., Assistant Professor of Obstetrics 820 Donaldson Bldg.
LOUIS B. BALDWIN, M.D., Superintendent of University Hospitals 304 State St. S. E.
RICHARD OLDING BEARD, M.D., Secretary of the Medical School and Associate Professor of Physiology University of Minnesota

- E. T. BELL, B.S., M.D., Assistant Professor of Pathology
215 Walnut St. S. E.
- EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology
3525 3d Ave. S.
- FRANK E. BURCH, M.D., Assistant Professor of Diseases of the Eye, Ear,
Nose, and Throat
930 Lowry Bldg., St. Paul
- ABRAHAM B. CATES, M.A., M.D., Associate Professor of Obstetrics
413 Pillsbury Bldg.
- ALEXANDER R. COLVIN, M.D., Assistant Professor of Surgery
342 Lowry Bldg., St. Paul
- HENRY WIREMAN COOK, B.A., M.D., Lecturer in Life Insurance
Auditorium Bldg.
- J. FRANK CORBETT, M.D., Associate Professor of Experimental Surgery
4401 E. Lake Harriet Blvd.
- WARREN A. DENNIS, B.L., M.D., Assistant Professor of Surgery
942 Lowry Bldg., St. Paul
- CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy
612 9th Ave. S. E.
- BURNSIDE FOSTER, B.A., M.D., Lecturer on the History of Medicine
821 Lowry Bldg., St. Paul
- EMIL S. GEIST, M.D., Assistant Professor of Orthopedic Surgery
614 Syndicate Bldg.
- JAMES S. GILFILLAN, M.D., Assistant Professor of Medicine
910 Lowry Bldg., St. Paul
- ARTHUR J. GILLETTE, M.D., Professor of Orthopedia
Seven Corners, St. Paul
- CHARLES LYMAN GREENE, M.D., Professor of Medicine and Chief of the
Department
324 Summit Ave., St. Paul
- ROBERT A. HALL, Ph.D., Assistant Professor of Pharmacology
323 6th Ave. S. E.
- A. S. HAMILTON, B.S., M.D., Associate Professor of Nervous and Mental
Diseases
513 Pillsbury Bldg.
- THOMAS B. HARTZELL, D.M.D., M.D., Research Professor in Mouth In-
fections for 1914-15
716 Donaldson Bldg.
- GEORGE D. HEAD, B.S., M.D., Associate Professor of Medicine
503 Donaldson Bldg.
- ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology and
Director of the Department
629 5th St. S. E.
- CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and Di-
rector of the Department
428 Walnut St. S. E.
- WINFORD P. LARSON, M.D., Assistant Professor of Bacteriology
614 9th Ave. S. E.
- ARTHUR A. LAW, M.D., Associate Professor of Surgery
420 Syndicate Bldg.
- FREDERICK E. LEAVITT, M.D., Assistant Professor of Obstetrics
910 Lowry Bldg., St. Paul

- THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy
509 E. River Road
- JENNINGS C. LITZENBERG, B.S., M.D., Professor of Obstetrics and Chief
of the Department 910 Donaldson Bldg.
- ELIAS P. LYON, Ph.D., M.D., Dean, Professor of Physiology and Director
of the Department 421 Union St. S. E.
- ARCHIBALD MACLAREN, B.S., M.D., Associate Professor of Surgery
914 Lowry Bldg., St. Paul
- JOHN S. MACNIE, B.A., M.D., Assistant Professor of Diseases of the Eye,
Ear, Nose, and Throat 506 Donaldson Bldg.
- ARTHUR T. MANN, B.S., M.D., Assistant Professor of Surgery
910 Donaldson Bldg.
- JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Department
616 Syndicate Bldg.
- ROBERT H. MULLIN, B.A., M.B., Associate Professor of Public Health
315 11th Ave. S. E.
- WILLIAM R. MURRAY, Ph.B., M.D., Associate Professor of Diseases of
the Eye, Ear, Nose, and Throat 621 Syndicate Bldg.
- LOUISE M. POWELL, R.N., Superintendent of the School for Nurses
417 Delaware St. S. E.
- WALTER R. RAMSEY, M.D., Assistant Professor of Pediatrics
942 Lowry Bldg., St. Paul
- SOREN P. REES, B.S., M.D., Assistant Professor of Medicine
1964 Penn Ave. S.
- HARRY P. RITCHIE, Ph.B., M.D., Assistant Professor of Surgery
914 Lowry Bldg., St. Paul
- *HAROLD E. ROBERTSON, B.A., M.D., Professor of Pathology and Acting
Director of Department of Pathology, Bacteriology, and Public Health
507 Essex St. S. E.
- JOHN T. ROGERS, M.D., Assistant Professor of Surgery
342 Lowry Bldg., St. Paul
- JOHN L. ROTHROCK, M.A., M.D., Assistant Professor of Gynecology
514 Lowry Bldg., St. Paul
- RICHARD E. SCAMMON, Ph.D., Professor of Anatomy
200 Harvard St. S. E.
- †FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Physi-
ology 1307 6th St. S. E.
- JULIUS PARKER SEDGWICK, B.S., M.D., Associate Professor of Pediatrics
614 Syndicate Bldg.
- FREDERIC W. SCHLUTZ, B.A., M.D., Assistant Professor of Pediatrics
820 Donaldson Bldg.
- ARTHUR SWEENEY, B.A., M.D., Lecturer in Medical Jurisprudence
821 Lowry Bldg., St. Paul
- SAMUEL SWEITZER, M.D., Assistant Professor of Dermatology
625 Syndicate Bldg.

*On leave of absence 1914-15.

†On leave of absence first semester 1914-15.

- FRANK C. TODD, M.D., Professor of Diseases of the Eye, Ear, Nose, and Throat 506 Donaldson Bldg.
 S. MARX WHITE, B.S., M.D., Associate Professor of Medicine 910 Donaldson Bldg.
 M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology 802 Donaldson Bldg.
 FRANKLIN R. WRIGHT, M.D., Assistant Professor of Genito-urinary Diseases 707 Donaldson Bldg.
-

- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology 3352 Prospect Terrace S. E.
 MOSES BARRON, B.S., M.D., Instructor in Pathology 763 Holly Ave., St. Paul
 FRANK S. BISSELL, M.D., Roentgenologist and Instructor in Roentgenology 4412 Lake Harriet Blvd.
 JOHN BUTLER, M.D., Instructor in Dermatology 403 Pillsbury Bldg.
 CARL C. CHATTERTON, M.D., Instructor in Orthopedic Surgery Seven Corners, St. Paul
 CHARLES R. DRAKE, M.D., Instructor in Medicine 1035 Andrus Bldg.
 CHARLES D. FREEMAN, M.D., Instructor in Dermatology and Genito-urinary Diseases 444 Lowry Bldg., St. Paul
 ALEXANDER R. HALL, M.D., Instructor in Medicine 535 Lowry Bldg., St. Paul
 ERNEST M. HAMMES, M.D., Instructor in Mental and Nervous Diseases 583 Endicott Bldg., St. Paul
 EARLE R. HARE, B.A., M.D., Instructor in Surgery 623 Syndicate Bldg.
 ARTHUR T. HENRICI, M.D., Instructor in Pathology and Bacteriology and Research Assistant in Mouth Infections 2443 Garfield Ave. S.
 PEDER A. HOFF, M.D., Instructor in Medicine 939 Lowry Bldg., St. Paul
 ELMER R. HOSKINS, M.A., Instructor in Histology and Embryology 113 Church St. S. E.
 EDGAR J. HUENEKENS, B.A., M.D., Instructor in Pediatrics 1036 Andrus Bldg.
 JOHN E. HYNES, M.D., Instructor in Medicine 3349 University Ave. S. E.
 HARRY G. IRVINE, M.D., Instructor in Dermatology 601 Syndicate Bldg.
 WILLIAM C. JOHNSON, B.A., M.D., Instructor in Pathology 313 8th Ave. S. E.
 FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiology and Physiologic Chemistry 209 State St. S. E.
 J. F. MCCLENDON, Ph.D., Instructor in Physiology 1307 6th St. S. E.
 ANGUS W. MORRISON, B.A., M.D., Instructor in Nervous and Mental Diseases 513 Pillsbury Bldg.
 J. A. MYERS, Ph.D., Instructor in Anatomy
 HORACE NEWHART, M.D., Instructor in Diseases of the Eye, Ear, Nose, and Throat 910 Donaldson Bldg.

OSCAR OWRE, M.D., C.M., Instructor in Genito-urinary Diseases	707 Masonic Temple
HAROLD PEDERSON, B.A., M.D., Instructor in Medicine	310 Pillsbury Bldg.
C. J. V. PETTIBONE, Ph.D., Instructor in Physiology and Physiologic Chemistry	112 Church St. S. E.
FREDERICK H. POPPE, B.A., M.D., Instructor in Surgery	820 Donaldson Bldg.
ALBERT C. POTTER, M.D., Instructor in Pathology and Bacteriology	2725 3d Ave. S.
FRED J. PRATT, M.D., Instructor in Diseases of the Eye, Ear, Nose, and Throat	328 Central Ave.
CHARLES A. REED, B.S., M.D., Instructor in Orthopedic Surgery	420 Syndicate Bldg.
ERNEST T. F. RICHARDS, M.D., C.M., Instructor in Medicine	914 Lowry Bldg., St. Paul
ARTHUR C. STRACHAUER, M.D., Instructor in Surgery	616 Syndicate Bldg.
IVAR SIVERTSEN, M.D., Instructor in Gynecology	315 Syndicate Bldg.
HENRY L. ULRICH, B.S., M.D., Instructor in Medicine	420 Syndicate Bldg.
MARGARET WARWICK, B.S., M.D., Instructor in Pathology and Bacteriology	1516 7th St. S. E.

Members of the faculties of other schools giving instruction to medical students:

GEORGE B. FRANKFORTER, Ph.D., Dean of the School of Chemistry
JOHN B. JOHNSTON, Ph.D., Dean of the College of Science, Literature, and the Arts, and Professor of Comparative Neurology
FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy
IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry
EVERHART P. HARDING, Ph.D., Associate Professor of Chemistry
WILLIAM H. HUNTER, Ph.D., Assistant Professor of Chemistry

TEACHING ASSISTANTS

JOHN S. ABBOTT, B.A., M.D., Assistant in Surgery	914 Lowry Bldg., St. Paul
ERNEST L. BAKER, M.D., Assistant in Medicine	503 Donaldson Bldg.
WILLIAM D. BEADIE, M.D., C.M., Assistant in Pediatrics	334 Lowry Bldg., St. Paul
CLIFTON A. BOREEN, B.S., M.D., Assistant in Dermatology	416 Syndicate Bldg.
PAUL F. BROWN, B.A., M.D., Assistant in Surgery	3733 Nicollet Ave.
HARRY E. CANFIELD, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat	506 Donaldson Bldg.
WALLACE COLE, M.D., Assistant in Orthopedics	925 Lowry Bldg., St. Paul

- BRONSON CROTHERS, B.A., M.D., Assistant in Pediatrics
925 Lowry Bldg., St. Paul
- E. L. GARDNER, B.S., M.D., Assistant in Obstetrics and Gynecology
1011 E. River Road
- JAMES F. HAMMOND, M.D., C.M., Assistant in Obstetrics
334 Lowry Bldg., St. Paul
- J. A. HEDDING, M.D., Assistant in Pediatrics
1029 Andrus Bldg.
- STANLEY E. KERRICK, M.D., Assistant in Diseases of the Eye, Ear, Nose,
and Throat
802 Donaldson Bldg.
- W. J. KREMER, M.D., Assistant in Genito-urinary Diseases
523 Plymouth Ave. N.
- JOHN M. LAJOIE, M.B., Assistant in Medicine
910 Donaldson Bldg.
- R. T. LA VAKE, B.A., M.D., Assistant in Orthopedics and Anatomy
413 Pillsbury Bldg.
- FRANK J. LAWLER, M.D., Assistant in Internal Medicine
1525 E. Lake St.
- EDWARD MOREN, M.D., Assistant in Surgery
1010 Donaldson Bldg.
- THOMAS A. PEPPARD, B.S., M.D., Assistant in Medicine
623 Syndicate Bldg.
- CHARLES M. ROBILLIARD, B.S., M.D., Assistant in Diseases of the Ear
- FREDERICK C. RODDA, M.D., Assistant in Pediatrics
134 E. 18th St.
- CHARLES L. RODGERS, M.D., Assistant in Obstetrics
700 W. Lake St.
- JALMAR H. SIMONS, B.S., M.D., Assistant in Obstetrics and Gynecology
1020 Donaldson Bldg.
- CHARLES E. SMITH, JR., M.D., Assistant in Pediatrics
740 Lowry Bldg., St. Paul
- HENRY C. STUHR, M.D., Assistant in Surgery
628 Syndicate Bldg.
- GEORGE E. THOMAS, B.L., M.D., Assistant in Medicine
1 E. Lake St.
- ANTON G. WETHALL, B.S., M.D., Assistant in Genito-urinary Diseases
325 Cedar Ave.
- HENRY W. WOLTMANN, B.S., M.D., Assistant in Nervous and Mental
Diseases and Pathologist to the Out-patient Service
- HARRY B. ZIMMERMANN, M.D., Assistant in Surgery
910 Lowry Bldg., St. Paul

STUDENT ASSISTANTS

- HERBERT BUSCHER, Assistant in Anatomy
- R. E. CRUZEN, Assistant in Physiology
- W. E. CAMP, B.A., Assistant in Anatomy
- REUBEN A. JOHNSON, Assistant in Pathology and Bacteriology
- WILLIAM R. KING, B.S., Assistant in Pathology and Bacteriology
- LYLE J. ROBERTS, B.A., Assistant in Physiology
- C. A. STEWART, B.A., Assistant in Anatomy

COURSES OF INSTRUCTION

The twenty-sixth annual course of study in the Medical School begins September 8, 1914, and covers a period of nine months. The school year is divided into two semesters; the first semester ending January 23, 1915. Mid-year examinations are held at this time. The second semester begins February 3, 1915, and closes June 5, 1915.

The course in medicine covers a period of seven years; two years of which are taken in a recognized college of science, literature, and the arts, and five years in the Medical School. The latter are termed, therefore, the third, fourth, fifth, sixth, and seventh years.

The seventh year of study is devoted to an approved hospital internship or to advanced laboratory work, as a preparation for teaching, or to courses in Public Health.

The purpose of the school in establishing a hospital internship as a prerequisite to the degree is to insure the would-be practitioner of medicine a year of varied clinical experience, under competent supervision, in a well-equipped modern hospital, and to give to the public a further assurance of the efficiency of its graduates in their profession.

In the University Hospitals and in the affiliated hospitals of the Twin Cities, the work of the interne is under the close observation of the Faculty. Students who prefer to undertake internships in other hospitals must submit their appointments to faculty approval. It is expected that the staff of any hospital accepting University internes will submit to the faculty official detailed reports upon the service of its students.

The alternative of advanced laboratory work in the seventh year is provided for the encouragement of men and women of training who desire to enter the profession of medical teaching. Students who wish to avail themselves of this alternative should signify their intention not later than the second semester of their sixth year. They must be accepted for this service by the head of the department in which they wish to serve and by vote of the Administrative Board.

The alternative of courses in Public Health is offered to those who desire to engage in this important field of work. Similar notice of this election must be given and approved.

The general arrangement of studies is planned for the average student of medicine. The order of studies is not absolutely fixed. As wide a range of individual freedom is permitted as may prove consistent with systematic education. The Committee on Students' Work has authority, within due bounds of sequence of subjects, to adjust a student's program to his particular preparation, needs, and abilities.

Specially qualified students who, studying in the summer school or covering extra work during the school year, shall complete the total of 4,200 required and elective hours in seven semesters, may, upon request and by special vote of the Administrative Board, be allowed to spend a

semester as *externe* or acting *interne* in a hospital under direct supervision of members of the Faculty. Such students will register for hospital work as the regular program of this semester; they will be subject to the same examinations as other students, and may not shorten the time required by the laws of the states for graduation in medicine. Such externship or acting internship will not take the place of the required hospital, or advanced laboratory, year necessary to the degree.

Certain approved courses in Animal Biology, Chemistry, and other subjects taught in the University, outside the Medical School, may be taken as electives by medical students. A list of these courses may be had upon application.

N. B. Detailed information concerning the requirements for admission, registration, fees, scholarships, prizes, etc., will be found in a Circular of Information accompanying the Bulletin.

THE SEVEN-YEAR COURSE

The first two years of this course are taken in the College of Science, Literature, and the Arts of the University of Minnesota or other approved institution, and the last five years in the Medical School. The course leads to the degree of Bachelor of Science at the end of the first four years and to the degree of Doctor of Medicine at the end of the seventh year. The academic work must include certain required studies. (See Circular of Information.)

THE EIGHT-YEAR COURSE

Students who have completed junior work in the College of Science, Literature, and the Arts in this University may elect the first year's studies of the Medical School as the work of their senior academic year and, upon its satisfactory completion, will receive the degree of Bachelor of Arts. The required studies must be included in the academic course.

Carleton and Macalester Colleges have entered into an arrangement with the University of Minnesota whereby students of these colleges enjoy the same opportunities in these combined courses.

Upon the completion of five years' medical work the degree of Doctor of Medicine is conferred. As this course gives greater opportunity for elective studies in the College of Science, Literature, and the Arts, it is strongly recommended.

THE GRADUATE SCHOOL IN MEDICINE.

The Medical School has established a department of graduate school teaching, to be conducted in affiliation with the Graduate School of the University.

Applicants for admission to graduate school courses in Medicine must present evidence of

a. High moral and ethical standing in the profession.

b. The possession of the degree of Doctor of Medicine received from a recognized college or university.

c. The completion of at least one year's internship in an approved general hospital, or of an approved equivalent in practical experience.

The graduate courses will cover a period of three years, leading up to the degree of Doctor in Science, to be qualified in the terms of the specialty pursued: e. g., D. Sc. in Ophthalmology, D. Sc. in Surgery, etc. Two-year courses may be offered in certain specialties, which will not secure the degree, but, instead, a certificate of proficiency. Equivalent graduate courses taken in other acceptable institutions will be accepted, but at least the final year's work must be in residence. The schedule of graduate study will be sufficiently elastic for adaptation to each individual need. Each candidate's work will be under the supervision of a committee.

For the encouragement of graduate students in medicine, the University offers a group of teaching fellowships, distributed among the several departments, which cover the graduate course period of three years, at stipends of \$500 for the first year, \$750 for the second year, and \$1,000 for the third year.

Teaching fellows will be required to devote their entire time, in residence, for eleven months in each year. They will not be permitted to engage in practice. They will occupy a portion of their time-service in assistant teaching in the given specialty they elect to study.

A second group of graduate fellowships has been created, with similar distribution, for periods of three years' study, with a minor share of teaching duty, under provision of a stipend of \$150 a year, to cancel the regular graduate school fee.

In addition to appointments made under these fellowship groups, graduate students in Medicine will be received for purposes of general or special study, at a tuition fee of \$150 a year.

GRADUATE WORK

Students in the Medical School who have received the Baccalaureate degree from this or any other approved University may become candidates for the degree of Master of Arts, Master of Science, or Doctor of Philosophy in the Graduate School. In addition to the work credited to the M.D. degree, they must pursue courses of study conforming to the regulations of the Graduate School.

Students registered in the Graduate School may elect majors or minors for the graduate degrees, for which advanced courses are provided, in anatomy, embryology, histology, neurology, pathology, bacteriology, and physiology, in the Medical School.

In all cases, students must comply with the rules and regulations of the Graduate School of the University of Minnesota; further information of which may be found in the Announcement of the Graduate School.

THE SUMMER SESSION

A summer session of six weeks' duration immediately follows the Commencement in June. The courses in this session are conducted in the University and Municipal Hospitals and in the laboratories and lecture halls of the Medical School.

Graduates who hold the degree of Doctor of Medicine, of any recognized institution, or are licensed to practice medicine in any state, may be admitted to the Summer Session of the School.

Undergraduates in medicine will be admitted to the Summer Session to courses of study offered for the following purposes: (1) to secure advanced standing in degree of the equivalence of these courses to those offered in the regular sessions; (2) to compensate for deficiencies in studies taken in other acceptable schools; (3) to remove conditions or failures in subjects which are equivalently covered in these courses. Clinical courses will be open to undergraduates only in case they are not fully filled by graduate students.

The courses of instruction offered and the schedule of tuition fees will be found in the Announcement of the Summer Session, which will be sent upon application.

CREDITS

Students migratory from recognized medical schools will present to the Dean official credentials of admission requirements equivalent to those of this school, and also of time and subject credits. They will submit to the head of each department in which they seek exemption or advanced standing, records of successful examinations. These may be accepted as of full value, or supplemented by review examination, at the discretion of the department. Subject credit, but not time credit will be given for work done other than in a medical school. Special work will be arranged for students taking advanced standing.

No condition of advanced standing entitles the student to take two years of any graded study coincidentally.

EXAMINATIONS

The standing of students is determined by recitations, oral or written examinations, and review of laboratory or clinical note-books.

Examinations are held at the end of each semester upon subjects closed within that period.

Final standings are determined in conference of the heads of departments at the close of each semester. Reports of such standings are filed and obtainable in the Dean's office.

A uniform marking system has been adopted for the whole University. Four passing grades, indicated by the symbols *A*, *B*, *C*, and *D*, represent

differing degrees of merit. The symbol *E* represents a condition, which may be removed by examination and by such supplementary work as the department imposing it may require. *F* stands for a failure and calls for a repetition of the work in course. *I* stands for incomplete and grants the student further time for the completion of the required work.

Entrance conditions must be removed before the opening of the succeeding school year.

Subject conditions are removable at the first opportunity afforded. If not so removed, a condition becomes a failure.

Examinations for the removal of conditions and for advanced standing are held at the opening of the school year, in September, according to the following schedule:

Schedule of Examinations

Tuesday to Saturday, September 8-12, 1914

9:00 a. m.

2:00 p. m.

THIRD-YEAR COURSES

Tuesday	Anatomy (written)	Anatomy (practical)
Thursday	Anatomy (written)	Anatomy (practical)
Friday	General Bacteriology	Chemistry, organic, water and food analysis
Saturday	Physiology	

FOURTH-YEAR COURSES

Tuesday	General Pathology	Physiology
Wednesday	Special Pathology & Bacteriology (practical)	Special Pathology & Bacteriology (written)
Thursday		Pharmacology
Friday		Anatomy
Saturday	Medical Case Taking	
	Physical Diagnosis	

FIFTH-YEAR COURSES

Tuesday	Obstetrics	Practice of Medicine
	Gynecology	Pediatrics
Wednesday	Principles of Surgery	Surgical Anatomy
Thursday	Surgery	Pharmacology
Friday	Mental and Nervous	Surgical Pathology
	Operative Surgery	Clinical Pathology
Saturday	Pathology of Tumors	

SIXTH-YEAR COURSES

Tuesday	Obstetrics & Gynecology	Practice of Medicine
Wednesday	Surgery	Hygiene
Thursday	Eye and Ear	Nose and Throat
Friday	Therapeutic Conference	

Students must register for examinations in the Dean's office at least twenty-four hours prior to any examination they may wish to take.

An opportunity for the removal of first-semester conditions will be given at the Easter recess.

Habitual absence, unexcused; continued indifference to study; or persistently poor scholarship, may subject the student to temporary or indefinite suspension.

REQUIREMENTS FOR GRADUATION.

Compliance with admission requirements; completion of the full period of regular and elective work; the attainment of the degree of Bachelor of Arts or Bachelor of Science; an approved hospital internship, or advanced laboratory or public health study for one year; and an unimpeached moral character are the requirements for the degree of Doctor of Medicine.

CLINICAL SERVICE

Attendance upon clinics is required and will be recorded.

Seniors are assigned to clinical clerkships in the University hospital. As clinical clerks they are under the supervision of the senior interne, who will assign them to duty. Hours of service extend daily from 10:00 to 12:00 and 2:15 to 4:00. They will record physical examinations, make and record laboratory examinations, and attend hospital rounds. Patients will be examined by clinical clerks only at the direction of the attending clinician.

Senior students will be detailed for service as internes at the University Out-patient Department for periods of two weeks each, when they will reside at the dispensary and respond to calls for night service at any hour.

CLINICAL OPPORTUNITIES

THE UNIVERSITY HOSPITALS

The University is fortunate in the ownership and control of the University Hospital service. The Elliot Memorial Building, the product of a bequest of the estate of the late Dr. and Mrs. A. F. Elliot, supplemented by legislative appropriations, provides a present clinic of 136 beds. It is a fireproof and sound-proof structure and is generously equipped for teaching purposes.

The University Hospital system seeks the highest attainable results in the treatment of patients and the training of students. It employs a large clinical staff. Its clinical service is closely coöperative with the laboratory departments.

Its service is free and patients are admitted only upon the certificate of physicians of the State vouching for the applicant's inability to pay ordinary hospital charges and physician's fees, and stating the clinical character of the case. It carries a waiting list of available patients and entertains applicants from every county of the State.

A service building is in process of construction, under an appropriation of \$50,000 made by the last legislature, which will increase the capacity of the hospitals to 180 beds. At present the University is obliged to use temporary buildings for the housing of nurses and domestic help and for the maintenance of service features.

The Out-patient Department of the University Hospitals is housed, at present, in a detached building upon the west side of the Mississippi River, opposite the University Campus. Its service is open to free patients during the entire year and is conducted by the clinical staff of the Faculty of the Medical School. It is subdivided into medical, surgical, gynecological, obstetrical, children's, eye, ear, nose and throat, skin, genito-urinary, nervous and mental, and orthopedic clinics. It entertains 13,530 new patients and receives visits from 47,135 patients during the year.

Sections of the senior and junior classes are assigned to these clinics daily and are trained in case-history taking, physical examinations and diagnosis, in prescription writing, and in general therapeutic methods. The Out-patient Department is coöperative with the University Hospitals proper.

AFFILIATED HOSPITALS

The City Hospital of Minneapolis and the City and County Hospital of St. Paul are closely affiliated with the Medical School of the University. A large share of their clinical service is under the direction of the Faculty. Attending and consulting staffs are appointed annually upon the recommendation of the Administrative Board of the School. The combined resources of these two hospitals are represented by some 1,500 beds. Every phase of clinical service is seen in their wards and amphitheatres. Together with the University Hospitals, they offer a sufficient number of internships to meet the requirements of the School.

The State Hospital for the Crippled and Deformed has recently invited the Medical School to full participation in its clinical opportunities. Its superintending surgeon is a member of the Faculty and his assistants are largely chosen from its staff.

THE SCHOOL FOR NURSES

The School for Nurses is a department of University instruction under the control of the Medical School. It is conducted in connection with the University Hospitals. It is in charge of a Superintendent, assisted by a committee of management and by a teaching staff selected from the Faculty of the Medical School. While the undergraduates of the School for Nurses constitute in part the nursing corps of the University Hospitals, the school exists primarily for the efficient education of the nurse. It is the first school in the United States organized under direct University control.

A four years' high-school course is the minimal requirement for admission. Preference is given to women of superior preliminary attainments.

A four months' course of instruction in anatomy, physiology, chemistry, bacteriology, pharmacology, English, lettering, physical culture, principles of nursing, and hospital and household economics is given to matriculants, in the laboratories and lecture rooms of the University, before

they enter the hospital service. During this four months' course, students are not in residence. It calls for a tuition fee of \$25.00.

Two months' probation in hospital service follows the completion of the preliminary course. Upon final acceptance, students are entered for the remaining two and one-half years' work in hospital. They serve in rotation in the medical and surgical wards for men and for women, in obstetric service, in special departments of practice, and are assigned in their senior year to the out-patient clinics. Lecture courses in connection with the practical training are given by members of the Faculty and by the Superintendent of the School, throughout the year. Examinations are held at the close of each year's work.

The completed course leads up to the degree of Graduate in Nursing, conferred, upon recommendation of the Faculty, by the Board of Regents of the University.

Graduates are admitted, upon competitive examination, to a post-graduate course, during which they serve in the capacity of head nurse and are given the opportunity to pursue special lines of study.

Nurses in training are received from certain affiliated hospitals for the completion of their courses of study.

THE SCHOOL OF EMBALMING

At the instance of the State Undertakers' Association, a School of Embalming has been organized and is conducted for a period of six weeks, commencing January 4, 1915. It is under the direction of the Administrative Board of the Medical School.

Didactic and laboratory instruction is given in anatomy, bacteriology, chemistry, public health and sanitation, in autopsies, and in professional embalming, and in funeral management. Certificates are issued to candidates successfully completing the course.

Circulars of information will be sent upon application.

THE SCHOOL OF PUBLIC HEALTH

The School of Public Health has been organized under the control of the Administrative Board of the Medical School. An executive committee has been appointed by the Board for the immediate direction of the work of the School. This committee consists of the President of the University, the Dean of the Medical School, the head of the Department of Sanitary Engineering, the ranking instructor in charge of the division of Public Health in the Medical School, and the Executive Officer of the State Board of Health. A teaching faculty will be chosen, of which one member will sit in the Administrative Board of the Medical School. The functions of the School will be broad. It will institute measures relating to the health of the University community; it will prepare and recommend courses of instruction in public health in the several colleges of the Uni-

versity; it will conduct courses of instruction for health officials and others; it will establish and maintain a public health museum; and will coöperate with other agencies in the study of public health problems outside of the University.

The School expects to offer courses during the coming year for medical health officers, which will cover one year of time and will lead to the bestowal of a Certificate in Public Health. It is expected that this course will be further extended to cover a second year and will lead to the degree of Doctor in Public Health.

The school will coöperate with the Department of Pathology, Bacteriology, and Public Health in maintaining a course in hygiene for students of medicine.

DEPARTMENTAL STATEMENTS

THE DEPARTMENT OF ANATOMY

Professors CLARENCE MARTIN JACKSON, THOMAS G. LEE, RICHARD E. SCAMMON; Associate Professor CHARLES A. ERDMANN; Instructors WILLIAM F. ALLEN, E. R. HOSKINS, J. A. MYERS; Teaching Assistant R. T. LA VAKE; Student Assistants W. E. CAMP, C. A. STEWART, HERBERT BUSCHER.

Departmental Office, Institute of Anatomy

COURSES

No.	Title	Hours	Required of	Offered to
1 or 2.	Elementary Human Anatomy . .	48	School for Nurses	..
3-4.	Gross Human Anatomy.....	192	Medical, 3d yr.	..
5.	Descriptive Human Anatomy...	192	Dental, 1st yr.	..
6.	Dissections.....	128	Dental, 1st yr.	..
8.	Histology and Embryology.....	128	Dental, 1st yr.	..
51.	Human Histology.....	160	Medical, 3d yr.	..
52.	Human Embryology.....	96	Medical, 3d yr.	..
55.	Human Neurology.....	96	Medical, 4th yr.	..
111.	Anatomical Technique.....	80		Medical, 4th, 5th, or 6th yr.
114.	Topographic Anatomy.....	88	(Prereq.: 3-4)	Medical, 4th, 5th, or 6th yr.
115.	Applied Anatomy.....	48	(Prereq.: 3-4)	Medical, 4th, 5th, or 6th yr.
116.	Foetal Anatomy.....	48	(Prereq.: 3-4, 52)	Medical, 4th, 5th, or 6th yr.
117.	Implantation of Ovum.....	80	(Prereq.: 52)	Medical, 4th, 5th, or 6th yr.
119-120.	Advanced Anatomy.....	Ar.	(Prereq.: 3-4 or 51- 52 or 105)	Medical, 4th, 5th, or 6th yr.
201-202.	Research in Anatomy.....	Ar.	Special prerequi- site	Grad.
203-204.	Anatomical Seminar.....	32		Grad.

1 or 2. ELEMENTARY HUMAN ANATOMY. Primarily for School for Nurses. Lectures, recitations, and demonstrations. ERDMANN.

3-4. GROSS HUMAN ANATOMY. Dissections, including osteology. A disarticulated skeleton is loaned to every two students. Laboratory exercises, lectures, and recitations. JACKSON, ERDMANN, LA VAKE.

5. DESCRIPTIVE HUMAN ANATOMY. Morphology of the various systems. Osteology and splanchnology, with special reference to the digestive system. Dissections, beginning in December. Lectures and laboratory exercises. ERDMANN, MYERS, and Assistants.
6. DISSECTIONS. Continuation of Course 5. Dissections of the head and neck. Lectures and laboratory work. ERDMANN and Assistants.
8. HISTOLOGY AND EMBRYOLOGY. Lectures and laboratory course. LEE, ALLEN, CAMP.
51. HUMAN HISTOLOGY. Microscopic study of the various tissues and organs. Laboratory work, lectures, and recitations. SCAMMON, HOSKINS, CAMP.
52. HUMAN EMBRYOLOGY. Development of the human body. Laboratory work, lectures, and recitations. LEE, SCAMMON, HOSKINS.
55. HUMAN NEUROLOGY. A study of the central nervous system and sense organs. Laboratory work, lectures, and recitations. JOHNSTON, ALLEN, MYERS.
111. ANATOMICAL TECHNIQUE. Microtechnique, reconstruction, and museum methods, etc. Laboratory work and occasional lectures. ALLEN.
114. TOPOGRAPHIC ANATOMY. Based upon a study of serial cross-sections of the human body. Laboratory work, lectures, and recitations. JACKSON and Assistants.
115. APPLIED ANATOMY. Relationships, with reference to their clinical applications. Lectures and demonstrations. ERDMANN.
116. FOETAL ANATOMY. Dissection of the human foetus, with comparison of earlier embryonic and later postnatal structure. Individual laboratory work, with conferences and written reports. SCAMMON.
117. IMPLANTATION OF OVUM. A study of the implantation of the ovum and the formation of the decidua in man and mammals. Lectures and laboratory work. LEE.
- 119-120. ADVANCED ANATOMY. Advanced work, largely individual in character, in gross anatomy, including special dissections, in neurology, histology, or embryology. Laboratory work. JACKSON, LEE, SCAMMON, ERDMANN.
- 201-202. RESEARCH IN ANATOMY. Research work in gross or microscopic anatomy, neurology, histology, or embryology, for properly qualified students. JACKSON, LEE, SCAMMON.
- 203-204. ANATOMICAL SEMINAR. Presentation and discussion of research work in progress in the department, together with reviews of current anatomical literature. JACKSON.

THE DEPARTMENT OF PHYSIOLOGY

Professor ELIAS P. LYON; Associate Professors RICHARD O. BEARD, FREDERICK H. SCOTT; Assistant Professor M. RUSSELL WILCOX; Instructors F. B. KINGSBURY, J. F. MCCLENDON, C. J. V. PETTIBONE; Student Assistants R. E. CRUZEN, LYLE J. ROBERTS.

Departmental Office, Millard Hall

COURSES				
No.	Title	Hours	Required of	Offered to
1 or 2.	Elementary Human Physiology.	48	School for Nurses	..
3.	Elementary Human Physiology.	96	Home Economics	(Prereq.: Gen. Chem. 1 yr.)
4.	Elem. Physiology & Physiologic Chemistry.....	144	Dental, 1st yr.	..
52.	Physiologic Chemistry.....	96-144	Medical, 1st yr.	(Prereq.: Organic Chem.)
53.	Human Physiology.....	128-144	Medical, 2d yr.	(Prereq.: An. Biol. 1-2)
54.	Physiology of Nervous System.	40	Medical, 2d yr.	(Prereq.: An. Biol. 1-2)
101.	Urinalysis; Advanced Course...	24-48	(Prereq.: 52)	Medical, 4th, 5th, and 6th yrs.
102.	Advanced Mammalian Physiology.....	24	(Prereq.: 53)	Medical, 4th, 5th, and 6th yrs.
*103.	Physiology of Metabolism.....	24-48	(Prereq.: 52)	Medical, 4th, 5th, and 6th yrs.
104.	Physiology of Respiration.....	48	(Prereq.: 53)	Medical, 4th, 5th, and 6th yrs.
105.	Physical Chemistry of Cells & Tissues.....	48	(Prereq.: An. Biol. & Organic Chem.)	Medical, 4th, 5th, and 6th yrs.
117-118.	Advanced Physiology.....	Ar.	..	Medical, 4th, 5th, and 6th yrs.
*120.	Physiology of Development....	16	(Prereq.: 53)	Medical, 4th, 5th, and 6th yrs.
121.	Physiology of Eye and Ear. Adv. Course.....	24	(Prereq.: 54)	Medical, 4th, 5th, and 6th yrs.
123.	Physiology of Accommodation..	24	(Prereq.: 54)	Medical, 4th, 5th, and 6th yrs.
125.	Foods and Food Values.....	24	(Prereq.: 52, & 53 or 31)	Medical, 4th, 5th, and 6th yrs.
127-128.	Seminar: Physiology and Pharmacology.....	24	..	Medical, 4th, 5th, and 6th yrs.
201-202.	Research in Physiology.....	Ar.	..	Graduates

*Not given in 1914-15.

- 1-2. **ELEMENTARY HUMAN PHYSIOLOGY.** Course primarily for School for Nurses. Lectures and demonstrations. LYON, BEARD, SCOTT, PETTIBONE.
3. **ELEMENTARY HUMAN PHYSIOLOGY.** For Home Economics students, and others. Lectures, demonstrations, and laboratory exercises. LYON, BEARD, PETTIBONE, and Assistants.
4. **ELEMENTARY PHYSIOLOGY AND PHYSIOLOGIC CHEMISTRY.** Primarily for dental students. Lectures and laboratory work. SCOTT, PETTIBONE, and Assistants.
52. **PHYSIOLOGIC CHEMISTRY.** The components of the animal body; foods; the digesta; the excreta. Lectures, recitations, and laboratory exercises. PETTIBONE, KINGSBURY, MCCLENDON, and Assistants.
53. **HUMAN PHYSIOLOGY.** A course in the physiology of muscle and nerve; the circulation; the digestion; respiration, secretion, metabolism, and nutrition. Lectures, recitations, and laboratory exercises. LYON, BEARD, SCOTT, MCCLENDON, and Assistants.
54. **PHYSIOLOGY OF THE NERVOUS SYSTEM AND OF THE SPECIAL SENSES.** Lectures and laboratory exercises. LYON, BEARD, SCOTT, WILCOX, and Assistants.
101. **URINALYSIS; ADVANCED METHODS.** An elective course, given in one quarter. PETTIBONE.
102. **ADVANCED MAMMALIAN PHYSIOLOGY.** A course of classical experiments performed by students. Limited to six members. LYON, SCOTT.
- *103. **PHYSIOLOGY OF METABOLISM.** Students are placed on known diets and the results are studied by chemical methods. Limited to ten students. SCOTT, PETTIBONE.
104. **PHYSIOLOGY OF RESPIRATION.** An advanced course in methods of gas analysis applied to physiological problems. Limited to ten students. SCOTT.
105. **PHYSICAL CHEMISTRY OF CELLS AND TISSUES.** A study of the cryoscopic method, the electro-conductivity method, and the stalagmometric method and their application to blood and urine analysis and other physiologic problems. Lectures and laboratory work. MCCLENDON.
- 117-118. **ADVANCED COURSE IN PHYSIOLOGY.** An opportunity for qualified students to arrange with instructors for special work in various problems of physiology and physiologic chemistry.
- *120. **THE PHYSIOLOGY OF DEVELOPMENT.** A study of the physiology of the ovum, the embryo, and the foetus; of birth, infancy, childhood, adolescence, menstruation, ovulation, pregnancy, parturition, maturity, and old age. BEARD.

*Not given in 1914-15.

121. EXAMINATION OF THE EYE AND EAR. A study of advanced methods. Lectures, demonstrations, and laboratory exercises. WILCOX.
123. THE PHYSIOLOGY OF ACCOMMODATION. Lectures, demonstrations, and laboratory exercises. WILCOX.
125. FOODS AND FOOD VALUES. A study of human foodstuffs and their composition: of the principles of food selection, caloric indices, and balanced rations. A series of conference studies. Limited to twelve students. BEARD.
- 127-128. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. For instructors and advanced students. LYON, HIRSCHFELDER.
- 201-202. RESEARCH IN PHYSIOLOGY. LYON, SCOTT, MCCLENDON.

THE DEPARTMENT OF PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor E. D. BROWN;
Assistant Professor R. A. HALL.

Departmental Office, Millard Hall

COURSES

No.	Title	Hours	Required of	Offered to
1 or 2.	Elementary Pharmacology.....	48	School for Nurses	..
4.	Course in Pharmacology.....	48	Dental	..
52.	General and Experimental Pharmacology.....	80	Medical, 4th yr.	..
53-54.	General Pharmacology and Therapeutics.....	64	Medical, 5th yr.	..
55.	Therapeutic Conference.....	16	Medical, 6th yr.	..
102.	Advanced Pharmacology.....	48	(Prereq.: Chem. 119)	5th & 6th yrs.
103-104.	Synthetic or Experimental Pharmacology.....	48-144	(Prereq.: 54)	5th & 6th yrs.
105-106.	Seminar in Physiology and Pharmacology.....	32	..	5th & 6th yrs.

- 1 or 2. ELEMENTARY PHARMACOLOGY. A course, provided primarily for nurses, in the study of the history, uses, classification, and preparation of drugs, the definition of descriptive terms, the systems of weights and measures, the methods of administration, the principles of dosage, etc. HALL.
4. COURSE IN PHARMACOLOGY. Lectures, demonstrations, and recitations upon the history, origin, nature, pharmacal preparations, and uses of drugs, including the discussion of their physiologic, pharmacologic, and therapeutic actions. For students of dentistry. HALL.

52. GENERAL AND EXPERIMENTAL PHARMACOLOGY. A study of the principles underlying the structure, physico-chemical properties, and physiologic, therapeutic, and toxic actions of substances, natural or synthetic, used as medicines; with laboratory experiments illustrating the actions of principal drugs. HIRSCHFELDER, BROWN, HALL.
- 53-54. GENERAL PHARMACOLOGY AND THERAPEUTICS. A more detailed study of drugs important in clinical practice, covering the relations of chemical structure to physiologic and therapeutic action and their modes of application in clinical medicine. HIRSCHFELDER, BROWN, HALL.
55. THERAPEUTIC CONFERENCE. A systematic discussion of selected cases studied from case notes. HIRSCHFELDER.
102. ADVANCED PHARMACOLOGY. A study of the relation of drug action to chemical structure; of the mode of action and therapeutic application of various synthetic drugs; and of chemo-therapy. HIRSCHFELDER, BROWN, HALL.
- 103-104. SYNTHETIC OR EXPERIMENTAL PHARMACOLOGY. Elective courses requiring special investigation and experimental study of one or more subjects in pharmacology, in which the student is given an opportunity of choice of the following topics:
- a. Anesthetics, general and local; the principles and dangers of anesthesia.
 - b. Stimulants and depressants of the circulation and their relation to the treatment of heart disease.
 - c. Drugs acting upon the kidneys, normal or diseased.
 - d. Urinary antiseptics and the urinary excretion of drugs.
 - e. Action and detection of poisons and their antidotes.
 - f. Detailed study of the effects in man of the common harmless drugs.
 - g. The internal secretions and gland extracts: their effect upon the action of drugs.
 - h. Action of drugs upon animal and bacterial parasites, tumors, etc.
- 105-106. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. Reviews of recent literature bearing upon physiologic and pharmacologic subjects. Conducted by department directors, with the collaboration of the staffs and of qualified graduate or undergraduate students. HIRSCHFELDER, LYON.

THE DEPARTMENT OF PATHOLOGY, BACTERIOLOGY, AND PUBLIC HEALTH

Professor H. E. ROBERTSON*; Associate Professor R. H. MULLIN; Assistant Professors E. T. BELL, W. P. LARSON; Instructors MOSES BARRON,

*Absent on leave 1914-15.

A. T. HENRICI, W. C. JOHNSON, A. C. POTTER, MARGARET WARWICK;
 Assistants REUBEN JOHNSON, WILLIAM R. KING.

Departmental Office, Institute of Public Health and Pathology

COURSES

No.	Title	Hours	Required of	Offered to
1 or 2.	Elementary Bacteriology.....	32	School for Nurses	..
3.	Dental Bacteriology.....	32	Dental	..
4.	Dental Pathology.....	32	Dental	..
51.	General Pathology.....	96	Medical, 4th yr.	..
52.	Special Pathology.....	120	Medical, 4th yr.	..
53.	Clinical Pathology.....	64	Medical, 5th yr.	..
55-56.	Autopsies.....	Ar.	Medical	..
58.	General Bacteriology.....	96	Medical, 3d yr.	..
59.	Special Bacteriology.....	72	Medical, 4th yr.	..
*101-102.	Pathologic Diagnosis and Tech- nique.....	Ar.	..	5th yr.
104.	Advanced Bacteriologic Tech- nique & Problems.....	48	..	5th yr.
105.	Course in Immunity.....	48	..	6th yr.
106.	Experimental Pathology.....	48	..	5th or 6th yr.
107.	Diagnosis of Tumors.....	48	(Prereq.: 51 & 52)	5th or 6th yr.
108.	Gynecological Pathology.....	24	..	5th or 6th yr.
110.	Neuropathology.....	24	..	5th or 6th yr.
111-112.	Adv. Clinical Pathology.....	24-48	..	6th yr.
113-114.	Clinical Laboratory Course....	12	..	5th or 6th yr.
201-202.	Researches.....	Ar.	..	Graduates
61-62.	Course in Hygiene.....	64	Medical, 6th yr.	..

*Omitted in 1914-15.

- 1 or 2. **ELEMENTARY BACTERIOLOGY.** A course adapted to the needs of nurses. Lectures, demonstrations, and laboratory studies. HENRICI, WARWICK.
3. **DENTAL BACTERIOLOGY.** Lectures, demonstrations, and laboratory exercises in the principles of bacteriology as applied to the oral cavity. HENRICI, WARWICK.
4. **DENTAL PATHOLOGY.** Lectures, demonstrations, and laboratory exercises in the principles of pathology as applied to diseases of the oral cavity. BELL, KING.
51. **GENERAL PATHOLOGY.** The study of pathologic processes, including anemia, congestion, embolism, thrombosis, infarction, degeneration and necrosis, inflammation. Study of processes of regeneration and repair. Discussion of causation, classification and history of tumors. Examination of tumor structure in various types. ROBERTSON, BELL, BARRON, POTTER, KING.
52. **SPECIAL PATHOLOGY.** Studies of museum specimens and preparations and of autopsy material, for the demonstration of gross and micro-

scopic lesions in infectious diseases, as tuberculosis, syphilis, typhoid fever, etc.; and in special tissues and organs. ROBERTSON, BELL, BARRON, POTTER, KING.

53. CLINICAL PATHOLOGY. The macroscopic and microscopic study of the urine; the examination of blood, counting, fixing, staining, etc.; of blood cells, and hemoglobin estimations, in pathologic specimens; the examination of stomach contents; and of exudates and transudates in various diseases. JOHNSON, POTTER.

55-56. AUTOPSIES. Sections of the class attend and conduct autopsies under direction of the pathologist in charge. Reviews of clinical histories; description of gross specimens; and methods of section and study are included. ROBERTSON, BELL, JOHNSON, BARRON, POTTER.

58. GENERAL BACTERIOLOGY. A study of the biologic and chemical problems of bacterial life; the classification of bacteria; methods of isolation and culture; the composition of germicides, antiseptics, disinfectants, etc.; the bacterial examination of water and the purification of sewage. LARSON, HENRICI, WARWICK.

59. SPECIAL BACTERIOLOGY. Detailed instruction in characteristics of various pathogenic micro-organisms; in the morphology and pathogenicity of important types of higher bacteria; and in the principles of immunity and the practical applications of serum reactions. LARSON, HENRICI, WARWICK.

*101-102. PATHOLOGIC DIAGNOSIS AND TECHNIQUE. An elective course in the making of autopsies and in the preparation and examination of material from autopsies and operations for final report and record. Limited to ten students. ROBERTSON.

104. ADVANCED BACTERIOLOGIC TECHNIQUE AND PROBLEMS. A study of bacteriologic technique in greater detail than in the required course; dealing with special methods of isolation and cultivation of pathogenic bacterial forms, and including bacterial examination of sputum, urine, feces, exudates, etc. LARSON.

105. COURSE IN IMMUNITY. An elective course in the study of natural and acquired immunity, including experiments to show the several types of protective substances, and the principles and technique of serum diagnosis. LARSON.

106. EXPERIMENTAL PATHOLOGY. The experimental production and study of pathologic conditions, especially those of congestion, edema, inflammation, degeneration and necrosis, infarction, fat necrosis, icterus, glycosuria, acute nephritis, etc. Limited to eight students. BELL.

*Omitted in 1914-15.

107. **DIAGNOSIS OF TUMORS.** A course in the rapid preparation of microscopic specimens and the recognition of pathologic conditions in tissues surgically removed. The use of the freezing microtome and of simple histologic stains is taught. BELL.
108. **GYNCOLOGICAL PATHOLOGY.** An elective course in the study of pathologic conditions common to the diseases of women. ADAIR, BELL, KING.
110. **NEUROPATHOLOGY.** A study of the pathologic conditions of nerve tissues in characteristic lesions. HAMILTON, BELL, KING.
- 111-112. **ADVANCED CLINICAL PATHOLOGY.** A course in hematology, urinalysis, parasitology, gastric analyses, etc., given in the laboratories of the Minneapolis City Hospital and of the City and County Hospital of St. Paul. BARRON, POTTER.
- 113-114. **CLINICAL LABORATORY COURSE.** Practical diagnostic study in the out-patient department laboratory, for sections of four students. WOLTMANN, WARWICK.
- 201-202. **RESEARCHES.** An opportunity for graduate students, of the necessary preliminary training, to elect research work, either as majors or minors, in Pathology, Bacteriology, or Public Health. BELL, LARSON.
- 61-62. **COURSE IN HYGIENE.** This course, for sixth-year medical students, is a composite one. It includes lectures upon the following subjects: Public Health Administration and Laws; Vital Statistics; Occupational Diseases; the General Principles of Transmissible Diseases; Public Health Laboratory Methods; Epidemiology; Sanitary Engineering; Laboratory Investigations of Water, Sewage, and Milk; Insects and Disease; Personal Hygiene; Dental Hygiene; School Hygiene; Tuberculosis; Infant Mortality. BRACKEN, DURAND, MULLIN, CHESLEY, BASS, WHITTAKER, HOWARD, BEARD, OWRE, KEENE, MARCLEY, SEDGWICK.

This course is maintained not only by the coöperation of University workers in related fields, but by the intimate relationship which exists between the University and the State Board of Health. The location of two of the divisions of the Board's service, the Division of Preventable Diseases and the Division of Sanitation in the Institute of Public Health and Pathology upon the University Campus favors this union of forces.

Courses in the School of Public Health for medical health officers are suitable as electives for sixth-year medical students.

The class enjoys the opportunity of inspection trips to such object lessons in the mechanism of public health work as the general and division offices and laboratories of the State Board of Health, the Arden Dairy, the Minneapolis Milk Company, the Minneapolis Garbage Disposal Plant, the Swift Company's Packing Plant, the Hopewell Hospital, the Anoka Sewage Disposal Plant, the Minneapolis Water Purification Plant, the School for the Feeble-minded and the School for the Deaf and Dumb at Faribault.

THE DEPARTMENT OF SURGERY

Professors J. E. MOORE, ARTHUR J. GILLETTE, FRANK C. TODD; Associate Professors J. FRANK CORBETT, ARTHUR A. LAW, ARCHIBALD MACLAREN, WILLIAM R. MURRAY; Assistant Professors FRANK E. BURCH, A. R. COLVIN, WARREN A. DENNIS, EMIL S. GEIST, JOHN S. MACNIE, ARTHUR T. MANN, HARRY P. RITCHIE, JOHN T. ROGERS, FRANKLIN R. WRIGHT; Instructors CARL C. CHATTERTON, EARLE R. HARE, HORACE NEWHART, OSCAR OWRE, FREDERICK H. POPPE, FRED J. PRATT, CHARLES A. REED, ARTHUR C. STRACHAUER; Assistants PAUL F. BROWN, HARRY E. CANFIELD, WALLACE COLE, STANLEY E. KERRICK, W. J. KREMER, R. T. LAVAKE, EDWARD MOREN, CHARLES M. ROBILLIARD, HENRY C. STUHR, ANTON G. WETHALL, HARRY B. ZIMMERMANN.

Departmental Office, Millard Hall.

COURSES

No.	Title	Hours	Required of	Offered to
51.	Surgical Technique.....	16	5th yr.	..
52.	General Surgery.....	48	5th yr.	..
53.	Principles of Surgery.....	56	5th yr.	..
54.	Regional Surgery.....	48	5th & 6th yrs.	..
55-56.	Diagnostic Clinic.....	32	5th yr.	..
57-58.	Operative Clinic.....	56	5th yr.	..
59-60.	Clinical Clerkships.....	64	6th yr.	..
61-62.	Operative Clinic.....	48	6th yr.	..
63-64.	Diagnostic Clinic.....	32	6th yr.	..
65-66.	Minor Operative Clinic.....	12	6th yr.	..
101-102.	Course in Minor Surgery.....	12	..	6th yr.
103.	Operative Course on the Cadaver	32	..	5th yr.
104.	Researches in Surgical Problems.....	24	..	5th yr.
106.	Course in Tumors.....	24	..	6th yr.
108.	Course in Experimental Surgery	40	..	6th yr.
110.	Local Anesthesia.....	8	..	6th yr.
112.	Surgical Quiz.....	16	..	6th yr.
70.	Orthopedic Surgery.....	24	6th yr.	..
71-72.	Orthopedic Clinic.....	8	6th yr.	..
73.	Genito-urinary Diseases.....	16	6th yr.	..
75-76.	Genito-urinary Clinic.....	8	6th yr.	..
77-78.	Genito-urinary Clinic.....	8	6th yr.	..
113-114.	Genito-urinary Diseases.....	8	..	6th yr.
115-116.	Course in Endoscopy and Cystoscopy.....	8	..	6th yr.
81.	Ophthalmology and Otology....	32	6th yr.	..
83.	Rhinology and Laryngology....	16	6th yr.	..
85-86.	Operative Clinics in Eye, Ear, Nose, and Throat.....	28	6th yr.	..
87-88.	Clinic in Diseases of the Eye..	12	6th yr.	..
89-90.	Clinic in Diseases of the Ear....	12	6th yr.	..
91-92.	Clinic in Diseases of the Nose and Throat.....	12	6th yr.	..

No.	Title	Hours	Required of	Offered to
115-116.	Clinic in Diseases of the Eye...	12	..	6th yr.
117-118.	Clinic in Diseases of the Ear...	12	..	6th yr.
119-120.	Clinic in Diseases of the Nose and Throat.....	12	..	6th yr.
121-122.	Operative Clinic in Eye, Ear, Nose and Throat.....	16	..	6th yr.
123-124.	Course in Refraction.....	32	..	6th yr.
126.	Course in Ophthalmoscopy.....	16	..	6th yr.

51. **SURGICAL TECHNIQUE.** A course in operative principles. Lectures and demonstrations. STRACHAUER.
52. **GENERAL SURGERY.** A course of lectures upon the diseases and injuries of bones, joints, tendons, fascia, bursae, blood vessels, and nerves. LAW.
53. **PRINCIPLES OF SURGERY.** Lectures and demonstrations upon surgical inflammations, etc.; illustrated by gross and microscopic preparations from the living subject and from experimental sources. CORBETT.
54. **REGIONAL SURGERY.** A course of lectures upon the practical surgery of the several regions of the body. MOORE.
- 55-56. **DIAGNOSTIC CLINIC.** A series of clinics upon the diagnosis of surgical conditions as presented in the hospital wards. MOORE.
- 57-58. **OPERATIVE CLINIC.** A course in operative procedures conducted at the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul on Thursdays and Saturdays. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, DENNIS, COLVIN.
- 59-60. **CLINICAL CLERKSHIPS.** Courses in direct observation of patients in hospital, under supervision of the senior internes, and in the taking and recording of case histories and in the making of provisional diagnoses. CLINICAL STAFF.
- 61-62. **OPERATIVE CLINIC.** A course of operations in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul, on Tuesdays, Thursdays, and Saturdays. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, DENNIS, COLVIN.
- 63-64. **DIAGNOSTIC CLINIC.** Advanced work in the diagnosis of surgical diseases and injuries. Conducted in the wards of the University Hospitals. MOORE.
- 65-66. **MINOR OPERATIVE CLINICS.** Courses conducted, on three days in each week, at the Out-patient Department, where large numbers of cases are presented. STRACHAUER, HARE, and Assistants.
- 101-102. **COURSE IN MINOR SURGERY.** An elective course of study in diagnosis and treatment of selected cases. STRACHAUER, HARE, and Assistants.

103. OPERATIVE COURSE ON THE CADAVER. A study of the technique of abdominal incision and closure; of bowel suturing, appendiceal removal, kidney exploration, nephrotomy, tracheotomy, amputations, ligations, and of other problems in emergency surgery. CORBETT.
104. RESEARCHES IN SURGICAL PROBLEMS. A study of approved problems selected by students in the course, by operative, physiological, histological, and chemical methods. CORBETT.
106. COURSE IN TUMORS. A study of the pathology and diagnosis of tumors, classified by anatomical relation. CORBETT.
108. COURSE IN EXPERIMENTAL SURGERY. A study of surgical technique by cardinal operations upon animals. CORBETT.
110. LOCAL ANESTHESIA. A study of methods and applications of local anesthesia in both major and minor surgery. STRACHAUER.
112. SURGICAL QUIZ. A review of surgical studies by recitation and conference. MANN.
70. ORTHOPEDIC SURGERY. A course of clinical lectures and operations conducted, in each quarter, with divisions of students, at the Hospital for Crippled and Deformed at Phalen Park. GILLETTE.
- 71-72. ORTHOPEDIC CLINIC. A study of cases of orthopedic disease and treatment at the Out-patient Department; three weekly sessions. GEIST, REED, COLE.
73. GENITO-URINARY DISEASES. A course of lectures upon the etiology, diagnosis, and treatment of this group of diseases. WRIGHT.
- 75-76. GENITO-URINARY CLINIC. The study of cases at the bedside and in the operating rooms of the several hospitals. WRIGHT, OWRE.
- 77-78. GENITO-URINARY CLINIC. The observation, examination, and treatment of patients in the Out-patient Service at three weekly sessions. WRIGHT, OWRE, and Assistants.
- 113-114. GENITO-URINARY DISEASES. An elective course in the study of cases in the Out-patient clinics, giving the student the opportunity of examinations and supervised treatment of patients. WRIGHT, OWRE, and Assistants.
- 115-116. COURSE IN ENDOSCOPY AND CYSTOSCOPY. An elective course in methods of investigation and treatment, conducted at the Out-patient Department. WRIGHT.
81. OPHTHALMOLOGY AND OTOTOLOGY. A course of lectures and demonstrations upon disorders and diseases of the eye and ear and their corrective medical and surgical treatment. TODD.

83. RHINOLOGY AND LARYNGOLOGY. A course of lectures and demonstrations upon the diagnosis and treatment of diseases of the nose and throat. MURRAY.
- 85-86. OPERATIVE CLINICS IN EYE, EAR, NOSE, AND THROAT. The observation and study of operative procedures in the clinics of the University Hospital, the Minneapolis City Hospital, and the City and County Hospital, at St. Paul. TODD, BURCH, MURRAY, MACNIE.
- 87-88. CLINIC IN DISEASES OF THE EYE. The study and treatment of disorders and diseases of the eye, in the Out-patient Service, at three weekly sessions. MACNIE, PRATT, CANFIELD, KERRICK.
- 89-90. CLINIC IN DISEASES OF THE EAR. The study and treatment of disorders and diseases of the ear, in the Out-patient Service, at three weekly sessions. NEWHART, ROBILIARD.
- 91-92. CLINIC IN DISEASES OF THE NOSE AND THROAT. The study and treatment of diseases of the nose and throat in the Out-patient Service, at three weekly sessions. MURRAY.
- 115-116. CLINIC IN DISEASES OF THE EYE.
- 117-118. CLINIC IN DISEASES OF THE EAR.
- 119-120. CLINIC IN DISEASES OF THE NOSE AND THROAT.
Elective courses in each of these subjects, giving opportunity for the examination of patients, the diagnosis of diseased conditions and their supervised treatment, on alternate days, at the Out-patient Department. MACNIE, MURRAY, PRATT, NEWHART, CANFIELD, KERRICK, ROBILIARD.
- 121-122. OPERATIVE CLINIC IN EYE, EAR, NOSE, AND THROAT. An elective course, limited to ten students, but repeated in each quarter, at the University Hospitals. TODD.
- 123-124. COURSE IN REFRACTION. An elective course, open to twelve students, in each semester, consisting of weekly lectures and practice work in refraction. BURCH, CANFIELD.
126. COURSE IN OPHTHALMOSCOPY. An elective course in the principles and practice of this method of examination of the eye. MACNIE, PRATT.

DEPARTMENT OF MEDICINE

Professor CHARLES LYMAN GREENE; Associate Professors ARTHUR S. HAMILTON, GEORGE DOUGLAS HEAD, JULIUS PARKER SEDGWICK, S. MARX WHITE; Assistant Professors JAMES S. GILFILLAN, THOMAS B. HARTZELL, WALTER R. RAMSEY, SOREN P. REES, FREDERIC W. SCHLUTZ, SAMUEL E. SWEITZER; Lecturer ARTHUR SWEENEY; Instructors JOHN

BUTLER, CHARLES RALPH DRAKE, CHARLES D. FREEMAN, ALEXANDER R. HALL, ERNEST M. HAMMES, PEDER A. HOFF, EDGAR J. HUENEKENS, JOHN ELDON HYNES, HARRY J. IRVINE, ANGUS W. MORRISON, HAROLD PEDERSON, ERNEST T. F. RICHARDS, HENRY L. ULRICH; Teaching Assistants ERNEST L. BAKER, W. B. BEADIE, CLIFTON A. BOREEN, BRONSON CROTHERS, EDWIN L. GARDNER, J. A. HEDDING, JOHN M. LAJOIE, FRANK J. LAWLER, THOMAS A. PEPPARD, FREDERICK C. RODDA, CHARLES E. SMITH, JR., GEORGE E. THOMAS, HENRY W. WOLTMANN.

Department Office, Millard Hall

COURSES

No.	Title	Hours	Required of	Offered to
50.	Course in Case Taking.....	16	4th yr.	..
52.	Course in Medical Diagnosis...	32	4th yr.	..
51.	Diseases of the Heart and Blood Vessels.....	16	5th yr.	..
53.	Diseases of the Bronchi, Lungs, and Pleura.....	16	5th yr.	..
54.	Diseases of the Blood and Ductless Glands.....	16	5th yr.	..
55.	Gastric Diseases.....	16	5th yr.	..
56.	Diseases of the Intestinal Tract..	16	5th yr.	..
57.	Diseases of the Kidney.....	8	5th yr.	..
58.	Constitutional Diseases and Intoxications.....	8	5th yr.	..
59-60.	Acute Infectious Diseases.....	24	5th yr.	..
61-62.	Recitation Courses.....	32	5th yr.	..
63-64.	Case Analysis.....	64	6th yr.	..
65-66.	General Clinic in Medicine.....	32	5th yr.	..
67-68.	Out-patient Clinic.....	24	5th yr.	..
69-70.	Clinical Clerkships.....	144	6th yr.	..
71-72.	General Medical Clinics.....	8	6th yr.	..
73-74.	Out-patient Clinics.....	12	6th yr.	..
101-102.	Out-patient Clinics.....	12	..	6th yr.
103-104.	Physical Diagnosis.....	32	..	5th & 6th yrs.
106.	Tropical and Parasitic Diseases..	8	..	6th yr.
108.	Examination for Life Insurance..	8	..	6th yr.
109.	Acute Infectious Diseases.....	16	..	6th yr.
110.	Advanced Physical Diagnosis...	16	..	6th yr.
111.	Acute and Chronic Heart Ailments.....	8	..	5th or 6th yr
112.	Acute Respiratory Diseases....	8	..	5th or 6th yr
114.	Diagnosis of Abdominal Diseases	8	..	5th or 6th yr
115.	Pulmonary Tuberculosis.....	8	..	6th yr.
117.	Pulmonary Tuberculosis (repetition of Course 115).....	8	..	5th yr.
118.	Mouth Infections.....	8	..	6th yr.
75-76.	Neurology and Neurologic Diagnosis.....	28	5th yr.	..
78.	Psychiatry.....	12	5th yr.	..
81-82.	Clinical Neurology and Psychiatry.....	20	5th yr.	..

No.	Title	Hours	Required of	Offered to
83-84.	Clinical Neurology and Psychiatry.....	20	6th yr.	..
85-86.	Neurological Clinics.....	12	6th yr.	..
119-120.	Neurological Clinics.....	12	..	6th yr.
121.	Organic Nervous Diseases.....	16	..	6th yr.
122.	Syphilitic Nervous Affections...	16	..	6th yr.
88.	Diseases of Children.....	56	5th yr.	..
89-90.	Clinic in Pediatrics.....	16	5th yr.	..
91-92.	Clinic in Contagious Diseases...	16	5th yr.	..
93-94.	Clinic in Pediatrics.....	8	6th yr.	..
95-96.	Out-patient Pediatric Clinic....	12	6th yr.	..
123-124.	Out-patient Pediatric Clinic....	12	..	6th yr.
125.	Contagious Diseases.....	16	..	5th & 6th yrs.
126.	Nervous Diseases of Children...	16	..	5th & 6th yrs.
127.	Diseases of the New-born.....	16	..	5th & 6th yrs.
128.	Course in Infant Feeding.....	24	..	6th yr.
129-130.	Theory and Practice of Infant Feeding.....	8	..	6th yr.
97.	Course in Dermatology.....	16	6th yr.	..
99-100.	Clinical Dermatology.....	12	6th yr.	..
99a-100a.	Clinic in Dermatology.....	8	6th yr.	..
131-132.	Clinic in Dermatology.....	8	..	6th yr.
98.	Medical Jurisprudence.....	16	6th yr.	..
50.	COURSE IN CASE-TAKING. A study of general symptomatology and of the details of clinical examination and record. Lectures, recitations, and bedside demonstrations. HYNES.			
52.	COURSE IN MEDICAL DIAGNOSIS. A study of the methods of physical examination and diagnosis, with practical training upon the normal and abnormal subject. REES.			
51.	DISEASES OF THE HEART AND BLOOD VESSELS.			
53.	DISEASES OF THE BRONCHI, LUNGS, AND PLEURA.			
55.	GASTRIC DISEASES.			
54.	DISEASES OF THE BLOOD AND DUCTLESS GLANDS.			
56.	DISEASES OF THE INTESTINAL TRACT.			
57.	DISEASES OF THE KIDNEY.			
58.	CONSTITUTIONAL DISEASES AND INTOXICATIONS.			
59-60.	ACUTE INFECTIOUS DISEASES.			
61-62.	RECITATION COURSES.			

The preceding nine courses of lectures and recitations cover the systematic study of organal and constitutional diseases and intoxications, preparing the fifth-year student for direct clinical observation. GREENE, WHITE, HEAD, GILFILLAN, REES, ULRICH, RICHARDS.

63-64. CASE ANALYSIS. A study of actual case histories by the members of the class, aided by the instructor and illustrated by the presentation of the patient and, occasionally, by the demonstration of autopsy material. GREENE, WHITE.

- 65-66. GENERAL CLINIC IN MEDICINE. Conducted, throughout the year, in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital, St. Paul. CLINICAL STAFF.
- 67-88. OUT-PATIENT CLINIC. The practical study of clinical cases in the Out-patient Service. HYNES and Assistants.
- 69-70. CLINICAL CLERKSHIPS. Courses in the personal and direct observation of patients in hospital, under the supervision of senior internes, and in the taking and recording of case histories and the making of provisional diagnoses. CLINICAL STAFF.
- 71-72. GENERAL MEDICAL CLINICS. Conducted throughout the year, with sections of the class, in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital of St. Paul. CLINICAL STAFF.
- 73-74. OUT-PATIENT CLINICS. The practical study of large numbers of patients, in the diagnosis and treatment of disease, at the Out-patient Department. HYNES and Assistants.
- 101-102. OUT-PATIENT CLINICS. An elective course in the advanced study of selected cases at the Out-patient Service; three weekly sessions. HYNES and Assistants.
- 103-104. PHYSICAL DIAGNOSIS. An elective course of study of diagnostic methods applied to selected clinical cases. GILFILLAN, RICHARDS, ULRICH.
106. TROPICAL AND PARASITIC DISEASES. An elective course in the study of the etiology, characteristics, and treatment of tropical disorders and in diseases caused by certain animal parasites. ULRICH.
108. THE EXAMINATION FOR LIFE INSURANCE. An elective course in the requirements of standard and special examination of applicants for life insurance. COOK.
109. ACUTE INFECTIOUS DISEASES. An elective course in the study of the principal infections and their complications. GILFILLAN.
110. ADVANCED PHYSICAL DIAGNOSIS. An elective course in the study of methods of diagnosis applied to diseases of the heart and lungs. GILFILLAN.
111. ACUTE AND CHRONIC HEART AILMENTS. An elective course, devoted to the recognition and management of these disorders. REES.
112. ACUTE RESPIRATORY DISEASES. An elective study in the diagnosis and treatment of diseases of the respiratory tract. REES.
114. DIAGNOSIS OF ABDOMINAL DISEASES. An elective course in the differential study of diseases of the abdominal cavity. REES.

- 115, 117. PULMONARY TUBERCULOSIS. Elective courses, offered in the first quarter to sixth-year students and in the second quarter to fifth-year students; devoted to the diagnosis and treatment of the several stages of pulmonary tuberculosis. REES.
118. MOUTH INFECTIONS. An elective study in the typical infections of the oral cavity and their causal relations to disease. HARTZELL.
- 75-76. NEUROLOGY AND NEUROLOGIC DIAGNOSIS. Lectures, recitations, and demonstrations in the etiology, diagnosis, nature, and treatment of the classical diseases of the nervous system. HAMILTON.
78. PSYCHIATRY. A course of lectures, demonstrations, and recitations upon the general expressions and relations of mental disease. HAMILTON.
- 81-82. CLINICAL NEUROLOGY AND PSYCHIATRY. Clinics in nervous and mental diseases, for fifth-year students, conducted at the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital of St. Paul. HAMILTON, RIGGS, MORRISON, HAMMES.
- 83-84. CLINICAL NEUROLOGY AND PSYCHIATRY. Advanced clinics, for sixth-year students, conducted at the above hospitals throughout the year. HAMILTON, RIGGS, MORRISON, HAMMES.
- 85-86. NEUROLOGICAL CLINICS. The personal observation and study of cases of nervous disease in the Out-patient Service. HAMILTON, MORRISON, and Assistants.
- 119-120. NEUROLOGICAL CLINICS. The clinical study of selected cases of nervous diseases. An elective course at the Out-patient Department.
121. ORGANIC NERVOUS DISEASES. An elective course in advanced diagnosis of organic nervous diseases; an extension upon the work of the required course, limited to those who have completed the latter. HAMILTON.
122. SYPHILITIC NERVOUS AFFECTIONS. An elective study of the diagnosis and treatment of the expressions of syphilis in the central nervous system, combining clinical and laboratory teaching and referring particularly to dementia paralytica and tabes dorsalis. HAMMES.
88. DISEASES OF CHILDREN. A general review of the etiology, pathology, diagnosis, and treatment of diseases peculiar to, or distinctive in, children, with particular emphasis upon their differences from adult types. SEDGWICK.
- 89-90. CLINIC IN PEDIATRICS. Conducted, in one semester, at the University Hospitals, the Minneapolis City Hospital, Lymanhurst, and the City and County Hospital, St. Paul. SEDGWICK, SCHLUTZ, RAMSEY, HUENEKENS, and Assistants.

- 91-92. CLINIC IN CONTAGIOUS DISEASES. Conducted, in one semester, in the Minneapolis City Hospital and the City and County Hospital, St. Paul. SEDGWICK, SCHLUTZ, RAMSEY, HUENEKENS, and Assistants.
- 93-94. CLINIC IN PEDIATRICS. An advanced clinical course, for sixth-year students, conducted at the University Hospitals and at the affiliated hospitals. SEDGWICK, RAMSEY, SCHLUTZ.
- 95-96. OUT-PATIENT PEDIATRIC CLINIC. The practical study of the diseases of children in the Out-patient Service. SCHLUTZ, HUENEKENS, and Assistants.
- 123-124. OUT-PATIENT PEDIATRIC CLINIC. An elective course in the study of selected cases of disease in childhood, at the Out-patient Department; three sessions weekly. SCHLUTZ, HUENEKENS, and Assistants.
125. CONTAGIOUS DISEASES. An elective course for the advanced study of contagious diseases, including the practice of intubation and tracheotomy, with training upon the cadaver. RAMSEY.
126. NERVOUS DISEASES OF CHILDREN. An elective study of the functional nervous disorders of childhood, with the observation and practice of electrical reactions in normal and abnormal children. Limited to six students. SEDGWICK.
127. DISEASES OF THE NEW-BORN. An elective course, including the applications of X-ray diagnosis in children; the pathology and treatment of these disorders, with the presentation of illustrative cases. Limited to six students. SEDGWICK.
128. COURSE IN INFANT FEEDING. An elective study conducted at the St. Paul Baby Welfare Clinic of the H. Amherst Wilder Charity. RAMSEY.
- 129-130. THEORY AND PRACTICE OF INFANT FEEDING. An elective course to be given at the Lymanhurst clinic. Limited to six students, but repetitional in each quarter of the year. SCHLUTZ.
97. COURSE IN DERMATOLOGY. A descriptive study of the common skin diseases and of syphilis, including diagnosis and treatment. SWEITZER.
- 99-100. CLINICAL DERMATOLOGY. Clinics conducted throughout the year at the Minneapolis City Hospital and the City and County Hospital, St. Paul. SWEITZER, FREEMAN, BUTLER, IRVINE.
- 99a-100a. CLINIC IN DERMATOLOGY. The practical study of cases of skin and syphilitic disease, in the Out-patient Service. SWEITZER, BUTLER, IRVINE.
- 131-132. CLINIC IN DERMATOLOGY. An elective course in the study of selected cases of skin and syphilitic diseases, at the Out-patient Department. SWEITZER, BUTLER, IRVINE.

98. MEDICAL JURISPRUDENCE. Lectures upon the principles of law, the rules of evidence, and the duties of physicians in medico-legal cases. SWEENEY.

THE DEPARTMENT OF OBSTETRICS

Professor J. C. LITZENBERG; Associate Professor A. B. CATES; Assistant Professors F. L. ADAIR, FREDERICK LEAVITT, J. L. ROTHROCK; Instructor IVAR SIVERTSEN; Teaching Assistants JAMES F. HAMMOND, CHARLES L. RODGERS, JALMAR H. SIMONS.

Departmental Office, Institute of Anatomy

COURSES

No.	Title	Hours	Required of	Offered to
51-52.	Theory and Practice of Obstetrics.....	64	5th yr.	..
53-54.	Course in Obstetrics.....	32	6th yr.	..
55-56.	Course in Gynecology.....	48	5th & 6th yr.	..
	(3 quarters)			
57-58.	Clinical Course in Obstetrics & Gynecology.....	20	5th yr.	..
59-60.	Clinical Course in Obstetrics & Gynecology.....	24	6th yr.	..
61-62.	Clinical Course in Obstetrics & Gynecology.....	12	6th yr.	..
101-102.	Course in Case Analysis.....	64	..	6th yr.
103-104.	Special Clinical Courses.....	12	..	5th & 6th yr.
105-106.	Seminar in Obstetrics & Gynecology.....	32	..	6th yr.
107-108.	Obstetric and Gynecologic Pathology.....	24	..	5th & 6th yr.
109-110.	Course in Operative Obstetrics..	12	..	6th yr.

51-52. THEORY AND PRACTICE OF OBSTETRICS. A course of lectures and recitations on the physiology of pregnancy, parturition, and the puerperium. CATES.

53-54. COURSE IN OBSTETRICS. A study of the pathology of pregnancy and parturition and of the puerperium. Lectures, demonstrations, and case analyses. LITZENBERG, CATES, LEAVITT, ADAIR.

55-56. COURSE IN GYNECOLOGY. Lectures, demonstrations, and case analyses in the diseases of women. LITZENBERG, LEAVITT, ADAIR.

57-58. CLINICAL COURSE IN OBSTETRICS AND GYNECOLOGY. Demonstration, diagnosis, and treatment of cases. Clinics conducted in the University Hospital, the City Hospital of Minneapolis, and the City and County Hospital in St. Paul. LITZENBERG, LEAVITT, ROTHROCK, ADAIR.

- 59-60. CLINICAL COURSE IN OBSTETRICS AND GYNECOLOGY; continuing the above and conducted in the same hospitals. LITZENBERG, LEAVITT, ROTHROCK, ADAIR.
- 61-62. CLINICAL COURSE IN OBSTETRICS AND GYNECOLOGY. Demonstration, diagnosis, and treatment of cases and attendance upon deliveries. Conducted at the Out-patient Department and in the homes of dispensary patients. ADAIR, SIVERTSEN, and Assistants.
- 101-102. COURSE IN CASE ANALYSIS. An elective course in the analytical study of cases presented to the class, covering obstetrical and gynecological work. LITZENBERG.
- 103-104. SPECIAL CLINICAL COURSES. A study in the diagnosis and treatment of diseases of women and of obstetrical conditions. An elective course repetitively conducted at the Out-patient Department, the clinic offering a large number of cases for examination daily. ADAIR, SIVERTSEN.
- 105-106. SEMINAR IN OBSTETRICS AND GYNECOLOGY. Offered as an elective and giving opportunity of advanced study of patients and of case histories. Limited to eight students. LITZENBERG.
- 107-108. OBSTETRICS AND GYNECOLOGIC PATHOLOGY. An elective course, limited to six students, in the pathologic study of cases. ADAIR.
- 109-110. COURSE IN OPERATIVE OBSTETRICS. An elective course, limited to four students, given in each quarter. LITZENBERG, LEAVITT, ADAIR.

ROENTGENOLOGY

An elective course in Roentgenology, which is not a departmentalized subject, will be offered to sixth-year students. It will occupy eight hours during one quarter in the first semester.

C
M66uZme
1915/16

UNIV. OF MINN.

Med
Sch

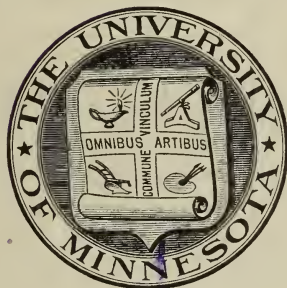
1915/16

Bulletin of The University of Minnesota

THE MEDICAL SCHOOL

1915-1916

UNIVERSITY OF ILLINOIS LIBRARY



UNIVERSITY OF ILLINOIS

SEP 9 2 1915

PRESIDENT'S OFFICE

VOL. XVIII, NO. 8, AUGUST 1915

Entered at the Post-Office
in Minneapolis as second-class matter
Minneapolis, Minn.

1915								1916															
JULY								JANUARY								JULY							
Su	Mo	Tu	W	Th	Fr	Sa		Su	Mo	Tu	W	Th	Fr	Sa		Su	Mo	Tu	W	Th	Fr	Sa	
..	..	..	..	1	2	3		..	..	..	..	..	..	1		..	..	..	..	..	..	1	
4	5	6	7	8	9	10		2	3	4	5	6	7	8		2	3	4	5	6	7	8	
11	12	13	14	15	16	17		9	10	11	12	13	14	15		9	10	11	12	13	14	15	
18	19	20	21	22	23	24		16	17	18	19	20	21	22		16	17	18	19	20	21	22	
25	26	27	28	29	30	31		23	24	25	26	27	28	29		23	24	25	26	27	28	29	
..	..	..	..	..	..	..		30	31	..	..	..	..	..		30	31	..	..	..	..	..	
AUGUST								FEBRUARY								AUGUST							
1	2	3	4	5	6	7		..	..	1	2	3	4	5		..	..	1	2	3	4	5	
8	9	10	11	12	13	14		6	7	8	9	10	11	12		6	7	8	9	10	11	12	
15	16	17	18	19	20	21		13	14	15	16	17	18	19		13	14	15	16	17	18	19	
22	23	24	25	26	27	28		20	21	22	23	24	25	26		20	21	22	23	24	25	26	
29	30	31	..	..	..	..		27	28	29	..	..	..	..		27	28	29	30	31	..	..	
..	..	..	..	..	..	..		..	..	..	..	..	..	..		..	..	..	..	..	..	..	
SEPTEMBER								MARCH								SEPTEMBER							
..	..	..	1	2	3	4		..	..	..	1	2	3	4		..	..	..	..	..	1	2	
5	6	7	8	9	10	11		5	6	7	8	9	10	11		3	4	5	6	7	8	9	
12	13	14	15	16	17	18		12	13	14	15	16	17	18		10	11	12	13	14	15	16	
19	20	21	22	23	24	25		19	20	21	22	23	24	25		17	18	19	20	21	22	23	
26	27	28	29	30	..	..		26	27	28	29	30	31	..		24	25	26	27	28	29	30	
..	..	..	..	..	..	..		..	..	..	..	..	..	..		..	..	..	..	..	..	..	
OCTOBER								APRIL								OCTOBER							
..	..	..	..	..	1	2		..	..	..	..	..	..	1		1	2	3	4	5	6	7	
3	4	5	6	7	8	9		2	3	4	5	6	7	8		8	9	10	11	12	13	14	
10	11	12	13	14	15	16		9	10	11	12	13	14	15		15	16	17	18	19	20	21	
17	18	19	20	21	22	23		16	17	18	19	20	21	22		22	23	24	25	26	27	28	
24	25	26	27	28	29	30		23	24	25	26	27	28	29		29	30	31	..	..	..	..	
31	..	..	..	..	..	..		30	..	..	..	..	..	..		..	..	..	..	..	..	..	
NOVEMBER								MAY								NOVEMBER							
..	1	2	3	4	5	6		..	1	2	3	4	5	6		..	..	..	1	2	3	4	
7	8	9	10	11	12	13		7	8	9	10	11	12	13		5	6	7	8	9	10	11	
14	15	16	17	18	19	20		14	15	16	17	18	19	20		12	13	14	15	16	17	18	
21	22	23	24	25	26	27		21	22	23	24	25	26	27		19	20	21	22	23	24	25	
28	29	30	..	..	..	..		28	29	30	31	..	..	..		26	27	28	29	30	..	..	
..	..	..	..	..	..	..		..	..	..	..	..	..	..		..	..	..	..	..	..	..	
DECEMBER								JUNE								DECEMBER							
..	..	..	1	2	3	4		..	..	..	..	1	2	3		..	..	..	..	..	1	2	
5	6	7	8	9	10	11		4	5	6	7	8	9	10		3	4	5	6	7	8	9	
12	13	14	15	16	17	18		11	12	13	14	15	16	17		10	11	12	13	14	15	16	
19	20	21	22	23	24	25		18	19	20	21	22	23	24		17	18	19	20	21	22	23	
26	27	28	29	30	31	..		25	26	27	28	29	30	..		24	25	26	27	28	29	30	
..	..	..	..	..	..	..		..	..	..	..	..	..	..		31	..	..	..	..	..	..	

UNIVERSITY CALENDAR

1915-1916

The university year covers a period of thirty-eight weeks, beginning on the Tuesday before the second Thursday in September. Commencement Day is always the second Thursday in June.

1915

August	31	Tuesday	Registration closes except for new students
September	1-8	Week	Fees payable except for new students
September	7-14	Week	Examinations for the removal of conditions (except Colleges of Agriculture and Forestry), entrance examinations, registration of new students, and payment of fees
September	15	Wednesday	First semester begins
September	27	Monday	Agricultural College, farm experience examination
October	4	Monday	School of Agriculture, first term begins
October	7	Thursday	Senate meeting, 4:00 p.m.
November	8	Monday	Dairy School opens
November	24	Wednesday	Thanksgiving recess begins 9:00 p.m.
November	29	Monday	Thanksgiving recess ends 8:00 a.m.
Nov. 29 to Dec. 4	Week		Second semester condition examinations, Colleges of Agriculture and Forestry
December	2	Thursday	Senate meeting, 4:00 p.m.
December	6-11	Week	Short course for ice-cream makers
December	11	Saturday	Dairy School closes
December	17	Friday	Christmas vacation begins 9:00 p.m.
December	17	Friday	School of Agriculture, first term closes
1916			
January	3-8	Week	Farmers' Short Course
January	3	Monday	School of Embalming begins
January	4	Tuesday	Christmas vacation ends 8:00 a.m.
January	18	Tuesday	Registration for second semester closes
January	21	Tuesday	School of Agriculture, second term begins
January	24	Monday	Final examinations begin
January	25	Tuesday	Payment of fees for second semester closes
February	2	Wednesday	Second semester begins
February	3	Thursday	Senate meeting, 4:00 p.m.
February	12	Saturday	Lincoln's Birthday: a holiday
February	22	Tuesday	Washington's Birthday: a holiday
March	30	Wednesday	School of Agriculture closes

April	3-8	Week	Junior Short Course
April	19	Wednesday	Easter recess begins 9:00 p.m.
April	27	Thursday	Easter recess ends 8:00 a.m.
May	1-6	Week	Condition examinations in certain colleges
May	2	Tuesday	Traction Engineering Course begins
May	4	Thursday	Senate meeting, 4:00 p.m.
May	26	Friday	Final examinations begin
May	30	Tuesday	Memorial Day: a holiday
June	1-8	Week	Military Encampment, Fort Snelling
June	3	Saturday	Second semester closes
June	4	Sunday	Baccalaureate service
June	5	Monday	Senior class day exercises
June	7	Wednesday	Alumni Day
June	8	Thursday	Forty-fourth Annual Commencement.
June	9	Friday	Summer vacation begins
June	12	Monday	Summer Session begins

The university year for 1916-17 will begin Tuesday, September 12.

THE MEDICAL SCHOOL

THE ADMINISTRATIVE BOARD

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President
ELIAS POTTER LYON, Ph.D., M.D., Dean, and Director of the Department of Physiology
RICHARD OLDING BEARD, M.D., Assistant Dean and Secretary of the Medical School
LOUIS B. BALDWIN, M.D., Superintendent of the University Hospitals
....., Chief of the Department of Medicine
JAMES E. MOORE, M.D., Chief of the Department of Surgery
CLARENCE MARTIN JACKSON, M.S., M.D., Director of the Department of Anatomy
JENNINGS C. LITZENBERG, B.S., M.D., Chief of the Department of Obstetrics
ARTHUR D. HIRSCHFELDER, B.S., M.D., Director of the Department of Pharmacology
HAROLD E. ROBERTSON, B.A., M.D., Acting Director of the Department of Pathology, Bacteriology, and Public Health
FRED LYMAN ADAIR, B.S., M.D., Member-Elect, Representing the Faculty
ROBERT A. HALL, Ph.D., Member-Elect, Representing the Faculty

FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President 1005 5th St. S. E.
CYRUS NORTHROP, LL.D., President, Emeritus 519 10th Ave. S. E.
AMOS W. ABBOTT, M.D., Emeritus Professor of Gynecology 1717 Marquette Ave.
EVERTON J. ABBOTT, B.A., M.D., Emeritus Professor of Clinical Medicine 425 Dayton Ave., St. Paul
JOHN W. BELL, M.D., Emeritus Professor of Clinical Medicine and Physical Diagnosis 5127 Lake Harriet Blvd.
CHARLES A. WHEATON, M.D., Emeritus Professor of Surgery 329 Summit Ave., St. Paul
C. EUGENE RIGGS, M.A., M.D., Emeritus Professor of Mental and Nervous Diseases 10 Crocus Hill, St. Paul
THOMAS S. ROBERTS, M.D., Emeritus Professor of Pediatrics 1603 4th Ave. S.
JAMES T. CHRISTISON, M.D., Emeritus Professor of Pediatrics 535 Lowry Bldg., St. Paul
-
- F. L. ADAIR, B.S., M.D., Assistant Professor of Obstetrics 820 Donaldson Bldg.

- LOUIS B. BALDWIN, M.D., Superintendent of University Hospitals
509 E. River Road
- RICHARD OLDING BEARD, M.D., Assistant Dean and Secretary and Associate Professor of Physiology
University of Minnesota
- E. T. BELL, B.S., M.D., Associate Professor of Pathology
215 Walnut St. S. E.
- EDGAR D. BROWN, Ph.D., M.D., Associate Professor of Pharmacology
3525 3d Ave. S.
- FRANK E. BURCH, M.D., Assistant Professor of Diseases of the Eye, Ear, Nose and Throat
930 Lowry Bldg., St. Paul
- *ABRAHAM B. CATES, M.A., M.D., Associate Professor of Obstetrics
- ALEXANDER R. COLVIN, M.D., Assistant Professor of Surgery
342 Lowry Bldg., St. Paul
- HENRY WIREMAN COOK, B.A., M.D., Lecturer on Life Insurance
Auditorium Bldg.
- J. FRANK CORBETT, M.D., Associate Professor of Experimental Surgery
4401 E. Lake Harriet Blvd.
- WARREN A. DENNIS, B.L., M.D., Assistant Professor of Surgery
942 Lowry Bldg., St. Paul
- CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy
612 9th Ave. S. E.
- GEORGE B. FRANKFORTER, Ph.D., Dean of the School of Chemistry
525 East River Road
- EMIL S. GEIST, M.D., Assistant Professor of Orthopedic Surgery
614 Syndicate Bldg.
- ARTHUR J. GILLETTE, M.D., Professor of Orthopedic Surgery
Seven Corners, St. Paul
- ROBERT A. HALL, Ph.D., Assistant Professor of Pharmacology
323 6th Ave. S. E.
- A. S. HAMILTON, B.S., M.D., Associate Professor in charge of Division of Nervous and Mental Diseases
513 Pillsbury Bldg.
- THOMAS B. HARTZELL, D.M.D., M.D., Research Professor in Mouth Infections for 1915-16
716 Donaldson Bldg.
- ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology and Director of the Department
629 5th St. S. E.
- CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and Director of the Department
428 Walnut St. S. E.
- JOHN B. JOHNSTON, Ph.D., Dean of the College of Science, Literature, and the Arts, and Professor of Comparative Neurology
1115 5th St. S. E.
- WINFORD P. LARSON, M.D., Associate Professor of Bacteriology
614 9th Ave. S. E.
- ARTHUR A. LAW, M.D., Associate Professor of Surgery
420 Syndicate Bldg.
- THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy
509 E. River Road

*Deceased, June 9, 1915.

- JENNINGS C. LITZENBERG, B.S., M.D., Professor of Obstetrics and Chief of the Department 910 Donaldson Bldg.
- ELIAS P. LYON, Ph.D., M.D., Dean, Professor of Physiology and Director of the Department 421 Union St. S. E.
- ARCHIBALD MACLAREN, B.S., M.D., Associate Professor of Surgery 914 Lowry Bldg., St. Paul
- J. F. McCLENDON, Ph.D., Assistant Professor of Physiology University of Minnesota
- JOHN S. MACNIE, B.A., M.D., Assistant Professor of Diseases of the Eye, Ear, Nose, and Throat 506 Donaldson Bldg.
- ARTHUR T. MANN, B.S., M.D., Assistant Professor of Surgery 910 Donaldson Bldg.
- JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Department University of Minnesota
- ROBERT H. MULLIN, B.A., M.B., Associate Professor of Public Health 315 11th Ave. S. E.
- WILLIAM R. MURRAY, Ph.B., M.D., Associate Professor of Diseases of the Eye, Ear, Nose, and Throat 621 Syndicate Bldg.
- LOUISE M. POWELL, R.N., Superintendent of the School for Nurses 417 Delaware St. S. E.
- WALTER R. RAMSEY, M.D., Assistant Professor of Pediatrics 942 Lowry Bldg., St. Paul
- SOREN P. REES, B.S., M.D., Assistant Professor of Medicine 1964 Penn Ave. S.
- HARRY P. RITCHIE, Ph.B., M.D., Assistant Professor of Surgery 914 Lowry Bldg., St. Paul
- HAROLD E. ROBERTSON, B.A., M.D., Professor of Pathology and Acting Director of Department of Pathology, Bacteriology, and Public Health 507 Essex St. S. E.
- JOHN T. ROGERS, M.D., Assistant Professor of Surgery 342 Lowry Bldg., St. Paul
- JOHN L. ROTHROCK, M.A., M.D., Assistant Professor of Gynecology 514 Lowry Bldg., St. Paul
- RICHARD E. SCAMMON, Ph.D., Professor of Anatomy 215 Harvard St. S. E.
- FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Physiology 1307 6th St. S. E.
- JULIUS PARKER SEDGWICK, B.S., M.D., Associate Professor in charge of Division of Pediatrics 614 Syndicate Bldg.
- FREDERICK W. SCHLUTZ, B.A., M.D., Assistant Professor of Pediatrics 820 Donaldson Bldg.
- SAMUEL E. SWEITZER, M.D., Assistant Professor in charge of Division of Dermatology 625 Syndicate Bldg.
- FRANK C. TODD, M.D., Professor of Diseases of the Eye, Ear, Nose, and Throat 506 Donaldson Bldg.
- S. MARX WHITE, B.S., M.D., Associate Professor of Medicine 910 Donaldson Bldg.

- M. RUSSEL WILCOX, M.D., Assistant Professor of Physiology
802 Donaldson Bldg.
- FRANKLIN R. WRIGHT, M.D., Assistant Professor of Genito-urinary Dis-
eases 707 Donaldson Bldg.
- FREDERICK J. WULLING, Phm.D., LL.M., Dean of the College of Pharmacy
3305 2d Ave. S.
-
- JOHN S. ABBOTT, B.A., M.D., Instructor in Surgery
914 Lowry Bldg., St. Paul
- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology
3352 Prospect Terrace S. E.
- EARNEST L. BAKER, M.D., Instructor in Medicine 503 Donaldson Bldg.
- MOSES BARRON, B.S., M.D., Instructor in Pathology
763 Holly Ave., St. Paul
- FRANK S. BISSELL, M.D., Roentgenologist and Instructor in Roentgenology
4412 Lake Harriet Blvd.
- PAUL F. BROWN, B.A., M.D., Instructor in Surgery 3733 Nicollet Ave.
- JOHN BUTLER, M.D., Instructor in Dermatology 403 Pillsbury Bldg.
- W. E. CAMP, M.A., Instructor in Anatomy 112 Church St. S. E.
- CARL C. CHATTERTON, M.D., Instructor in Orthopedic Surgery
Seven Corners, St. Paul
- WALLACE COLE, M.D., Instructor in Orthopedic Surgery
925 Lowry Bldg., St. Paul
- WILLIAM H. CONDIT, B.S., M.D., Instructor in Obstetrics
2205 Kenwood Pkwy.
- BRONSON CROTHERS, B.A., M.D., Instructor in Pediatrics
925 Lowry Bldg., St. Paul
- CHARLES R. DRAKE, M.D., Instructor in Medicine 1035 Andrus Bldg.
- E. L. GARDNER, B.S., M.D., Instructor in Medicine 1011 E. River Road
- ERNEST M. HAMMES, M.D., Instructor in Mental and Nervous Diseases
1019 Lowry Bldg., St. Paul
- EARLE R. HARE, B.A., M.D., Instructor in Surgery 623 Syndicate Bldg.
- ARTHUR T. HENRICI, M.D., Instructor in Pathology and Bacteriology and
Research Assistant in Mouth Infections 2443 Garfield Ave. S.
- EDGAR J. HUENEKENS, B.A., M.D., Instructor in Pediatrics
820 Donaldson Bldg.
- HARRY G. IRVINE, M.D., Instructor in Dermatology 601 Syndicate Bldg.
- WILLIAM C. JOHNSON, B.A., M.D., Instructor in Pathology
313 8th Ave. S. E.
- JAMES A. JOHNSON, M.D., Instructor in Surgery 420 Syndicate Bldg.
- FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiologic Chemistry
209 State St. S. E.
- ANGUS W. MORRISON, B.A., M.D., Instructor in Nervous and Mental Dis-
eases 513 Pillsbury Bldg.
- J. A. MYERS, Ph.D., Instructor in Anatomy 624 University Ave. S. E.
- HORACE NEWHART, B.A., M.D., Instructor in Diseases of the Eye, Ear,
Nose, and Throat 910 Donaldson Bldg.

- OSCAR OWRE, M.D., C.M., Instructor in Genito-urinary Diseases
707 Masonic Temple
- HAROLD PEDERSON, B.A., M.D., Instructor in Medicine
310 Pillsbury Bldg.
- C. J. V. PETTIBONE, Ph.D., Instructor in Physiologic Chemistry
112 Church St. S. E.
- FREDERICK H. POPPE, B.A., M.D., Instructor in Surgery
820 Donaldson Bldg.
- ALBERT C. POTTER, M.D., Instructor in Pathology and Bacteriology
2725 3d Ave. S.
- FRED J. PRATT, M.D., Instructor in Diseases of the Eye, Ear, Nose, and Throat
328 Central Ave.
- CHARLES A. REED, B.S., M.D., Instructor in Orthopedic Surgery
420 Syndicate Bldg.
- ERNEST T. F. RICHARDS, M.D., C.M., Instructor in Medicine
744 Lowry Bldg., St. Paul
- FREDERICK C. RODDA, M.D., Instructor in Pediatrics
134 E. 18th St.
- ARTHUR C. STRACHAUER, M.D., Instructor in Surgery
616 Syndicate Bldg.
- CARL A. SCHERER, B.S., M.D., Instructor in Pediatrics
3004 4th Ave. S.
- JOHN P. SCHNEIDER, M.D., Instructor in Medicine
Syndicate Bldg.
- JALMAR H. SIMONS, B.S., M.D., Instructor in Obstetrics
1020 Donaldson Bldg.
- IVAR SIVERTSEN, M.D., Instructor in Gynecology
315 Syndicate Bldg.
- HENRY L. ULRICH, B.S., M.D., Instructor in Medicine
420 Syndicate Bldg.
- MARGARET WARWICK, B.S., M.D., Instructor in Pathology and Bacteriology
1516 7th St. S. E.
- HARRY B. ZIMMERMAN, M.D., Instructor in Surgery
910 Lowry Bldg., St. Paul

Members of the faculties of other schools giving instruction to medical students:

- IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry
- EVERHART P. HARDING, Ph.D., Associate Professor of Chemistry
- WILLIAM H. HUNTER, Ph.D., Assistant Professor of Chemistry

TEACHING ASSISTANTS

- WILLIAM D. BEADIE, M.D., C.M., Assistant in Pediatrics
334 Lowry Bldg., St. Paul
- CLIFTON A. BOREEN, B.S., M.D., Assistant in Dermatology
416 Syndicate Bldg.
- HOWARD S. CLARK, B.S., M.D., Assistant in Diseases of Eye, Ear, Nose, and Throat
616 Syndicate Bldg.
- ROY E. CRUZEN, Assistant in Physiology
1121 University Ave. S. E.
- CARL B. DRAKE, B.A., M.D., Assistant in Medicine
439 Lowry Bldg., St. Paul
- E. K. GREEN, M.D., Assistant in Surgery
307 Reid Corners

- JAMES HAMMOND, M.D., C.M., Assistant in Obstetrics
334 Lowry Bldg., St. Paul
- J. A. HEDDING, M.D., Assistant in Pediatrics
1029 Andrus Bldg
- ALEXANDER JOSEWITCH, B.S., M.D., Assistant in Medicine
2505 Chicago Ave.
- STANLEY E. KERRICK, M.D., Assistant in Diseases of the Eye, Ear, Nose,
and Throat
802 Donaldson Bldg.
- W. J. KREMER, M.D., Assistant in Genito-urinary Diseases
523 Plymouth Ave. N
- R. T. LA VAKE, B.A., M.D., Assistant in Anatomy and Obstetrics
413 Pillsbury Bldg.
- FRANK J. LAWLER, M.D., Assistant in Medicine
1525 E. Lake St.
- WILLIAM W. LEWIS, M.D., Assistant in Eye, Ear, Nose and Throat
Lowry Bldg., St. Paul
- A. E. LOBERG, M.D., Assistant in Mental and Nervous Diseases
1909 Washington Ave.
- HENRY A. LYSNE, B.S., M.D., Assistant in Pediatrics
700 20th Ave. N.
- C. O. MALAND, B.A., M.D., Assistant in Obstetrics
300 Reid Corners
- F. A. OLSON, B.A., M.D., Assistant in Medicine
914 Lowry Bldg., St. Paul
- G. M. OLSON, M.D., Assistant in Dermatology
636 Syndicate Bldg.
- THOMAS A. PEPPARD, B.S., M.D., Assistant in Medicine
623 Syndicate Bldg.
- CHARLES L. RODGERS, M.D., Assistant in Obstetrics
700 W. Lake St.
- W. C. RUTHERFORD, M.D., Assistant in Obstetrics
Lowry Bldg., St. Paul
- L. H. RUTLEDGE, A.B., Assistant in Anatomy
University of Minnesota
- C. A. STEWART, M.A., Assistant in Anatomy
1819 Fourth St. S. E.
- CHARLES E. SMITH, JR., M.D., Assistant in Pediatrics
740 Lowry Bldg., St. Paul
- MARGARET I. SMITH, M.D., Assistant in Diseases of Eye, Ear, Nose, and
Throat
1940 Emerson Ave. S.
- HENRY C. STUHR, M.D., Assistant in Surgery
628 Syndicate Bldg.
- GEORGE E. THOMAS, B.L., M.D., Assistant in Medicine
1 E. Lake St.
- ANTON G. WETHALL, B.S., M.D., Assistant in Genito-urinary Diseases
325 Cedar Ave.

TEACHING FELLOWS

- HENRY E. BINGER, M.D., in Division of Eye, Ear, Nose, and Throat
- G. L. McWHORTER, M.D., in Department of Surgery
- S. E. MOORE, LL.B., M.D., in Department of Obstetrics
- RALPH EDWIN MORRIS, M.S., M.D., in Department of Medicine
- ROOD TAYLOR, M.D., in Division of Pediatrics
- HENRY W. WOLTMANN, B.S., M.D., in Division of Mental and Nervous
Diseases

GRADUATE SCHOLARS

R. J. RIZER, M.D., in Department of Medicine

H. J. FRIESEN, M.D., in Division of Eye, Ear, Nose, and Throat

STUDENT ASSISTANTS

REUBEN A. JOHNSON, Assistant in Pathology and Bacteriology

J. A. KITTELSON, B.A., Assistant in Anatomy

J. C. MCKINLEY, B.S., Assistant in Anatomy

E. H. NORRIS, B.S., Assistant in Anatomy

LYLE J. ROBERTS, B.A., Assistant in Physiology

RAY SHANNON, M.S., Assistant in Pathology and Bacteriology

FLORIEN VAUGHN, A.B.,* Assistant in Anatomy

GENERAL INFORMATION

The twenty-eighth annual course of study in the Medical School begins Tuesday, September 7, 1915, and covers a period of nine months. A summer session of six weeks opens in the latter part of June.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL

(a) Two years of high school Latin, as part of the high school course required for entrance to the College of Science, Literature, and the Arts.

(b) At least two years of prescribed and elective study in the College of Science, Literature, and the Arts* of this University or of any other approved institution. The prescribed academic studies preliminary to medicine are: rhetoric, six credits; physics, eight credits; general chemistry and qualitative analysis, or these subjects combined with organic chemistry, twelve credits; zoology, six credits; and a reading knowledge of German. It will be understood that the two or more years of collegiate study will lead, upon the satisfactory completion of one or two years of medical study, to the baccalaureate degree in science or in arts.

Students holding the bachelor's degree of any recognized college may submit credentials of practical equivalence in cultural studies, provided an adequate knowledge of biology, chemistry, and physics has been attained.

REGISTRATION

Registration is had under the general university rules in the office of the Registrar. Registration slips and receipts for fees are to be deposited promptly in the office of the Dean of the Medical School, where final registration and classification are made, and where the student's courses of study will be arranged.

FEEES

The annual tuition fee in the Medical School is \$150.00, payable in two installments, at the opening of the first and second semesters. No tuition fee is charged for the final hospital or advanced laboratory year, which is now requisite to the degree.

Third-year students make a deposit of \$10.00 and fourth-, fifth-,

*Note: Carleton and Macalester Colleges offer acceptable pre-medical courses. Academic studies taken in other approved colleges will be considered by the Registrar on their merits.

and sixth-year students a deposit of \$5.00 as a caution fee. This fee covers the cost of unnecessary damage to school buildings, of breakage and loss of laboratory apparatus and material, penalties for late registration or late payment of fees, fees for condition examinations, and rentals of post-office box and lockers. Any balance remaining from this deposit will be returned to the student at the close of each year.

Arrangements have been made for the purchase of microscopes by students, either for cash or upon an installment plan.

Repetition of work in course demands the repetitional payment of fees.

Special students pay fees proportional to the studies they undertake.

A fee of \$1.00 is required for condition examinations; and a fee of \$5.00 for special examinations.

A fee of \$1.00 is required for attendance of students upon the clinical service of the City and County Hospital of St. Paul.

COMBINED COURSES IN ARTS AND MEDICINE

Students who are candidates for the degree of Bachelor of Arts, who have successfully completed three years, or 90 credits, of work and have won the required number of honor points, in the College of Science, Literature, and the Arts, may elect their fourth year in The Medical School and secure the remaining 30 credits and adequate honor points required for the baccalaureate degree, in that school.

Similarly, students who have completed, with the required number of honor points, the work of the first two years, or 60 credits, in the College of Science, Literature, and the Arts, may enter The Medical School and upon the successful conclusion of two years' work, with adequate honor points, will receive the degree of Bachelor of Science.

It will be understood that in either of these combined courses the required subjects, viz: rhetoric, chemistry, zoology, physics and a reading knowledge of German, must be included.

THE MEDICAL CURRICULUM

Students of medicine, within the regular four years of medical study, take a total of 4,200 hours of required and elective work. This total of hours is subdivided as follows: anatomy, 688 hours; physiology, 384 hours; organic chemistry or physical chemistry, and quantitative analysis, 160 hours; pathology, 416 hours; bacteriology, 152 hours; pharmacology, 160 hours; medicine, 752 hours; surgery, 640 hours; obstetrics and gynecology, 240 hours; hygiene and medical jurisprudence, 80 hours; electives, 528 hours.

With the year 1918, organic chemistry, as well as general chemistry and qualitative analysis, will become a pre-medical requirement and will not be included in the medical curriculum. It is recommended as a preliminary study at the present time, but provision will be made, until that date, for its inclusion in the schedule of the third year. A complete

list of required and elective courses will be found under Departmental Statements.

Certain approved courses in animal biology, chemistry, and other subjects taught in the University, outside the Medical School, may be taken as electives by medical students. A list of these courses may be had upon application.

The general arrangement of studies is planned for the average student of medicine. The order of studies is not absolutely fixed. As wide a range of individual freedom is permitted as may prove consistent with systematic education. The Committee on Students' Work has authority, within due bounds of sequence of subjects, to adjust a student's program to his particular preparation, needs, and abilities.

Specially qualified students, studying in the summer sessions or covering extra work during the school year, and completing the total of 4,200 required and elective hours in seven semesters, may, at their request and by special action of the Students' Work Committee, be allowed to spend a semester as *externe* or acting *interne* in a hospital under direct supervision of members of the Faculty. Such students will register for hospital work as the regular program of this semester; they will be subject to the same examinations as other students, and may not shorten the time required by the laws of the State for graduation in medicine. Such externship or acting internship will not take the place of the required hospital or advanced laboratory year necessary to the degree. Special courses for such advanced students are offered in the Summer Sessions between the fourth and fifth and between the fifth and sixth years.

CREDITS

Students migrating from recognized medical schools will present to the Dean official credentials of admission requirements equivalent to those of this school, and also of time and subject credits. They will submit to the head of each department, in which they seek exemption or advanced standing, records of successful examinations. These may be accepted as of full value, or supplemented by review examination, at the discretion of the department. Subject credit, but not time credit will be given for work done other than in a medical school. Special work will be arranged for students taking advanced standing.

No condition of advanced standing entitles the student to take two years of any graded study coincidentally.

CLINICAL SERVICE

Attendance upon clinics is required and will be recorded.

Seniors are assigned to clinical clerkships in the University Hospital. As clinical clerks they are under the supervision of senior internes or teaching fellows, who will assign them to duty. Hours of service extend daily from 10:00 to 12:00 and 2:15 to 4:00. They will record physical

examinations, make and record laboratory examinations, and attend hospital rounds. Patients will be examined by clinical clerks only at the direction of the attending clinician.

EXAMINATIONS

The standing of students is determined by recitations, oral or written examinations, and review of laboratory or clinical note-books.

Examinations are held at the end of each semester upon courses closed within that period.

Final standings are determined in conference of the heads of departments at the close of each semester. Reports of such standings are filed and obtainable in the Dean's office.

A uniform marking system has been adopted for the whole University. Four passing grades, indicated by the symbols *A*, *B*, *C*, and *D*, represent differing degrees of merit. The symbol *E* represents a condition, which may be removed by examination and by such supplementary work as the department imposing it may require. *F* stands for a failure and calls for a repetition of the work in course. *I* stands for incomplete and grants the student further time for the completion of the required work.

Entrance conditions must be removed before the opening of the succeeding school year.

Subject conditions are removable at the first opportunity afforded. If not so removed, a condition becomes a failure.

Examinations for the removal of conditions and for advanced standing are held at the opening of the school year, from August 31 to September 4, 1915. Schedule of examinations may be had upon request.

An opportunity for the removal of first-semester conditions will be given at the Easter recess.

Habitual absence, unexcused; continued indifference to study; or persistently poor scholarship, may subject the student to temporary or indefinite suspension.

REQUIREMENTS FOR GRADUATION

Compliance with the admission requirements; the prior attainment of the degree of Bachelor of Arts or Bachelor of Science, to which one year in medicine for the arts degree, and two years in medicine for the science degree, may contribute; the completion of the full four-year period of required and elective work in the Medical School; an approved hospital internship or advanced laboratory work or public health study for one year; and an unimpeachable moral character, are the essentials for graduation.

The required internship insures to the practitioner of medicine a year of varied clinical experience under competent supervision and gives to the public a greater assurance of efficiency in the graduate. The alternative of advanced laboratory work serves to encourage men and women of training who desire to enter the profession of medical teaching.

The alternative of public health study meets a growing demand for trained medical sanitarians.

CLINICAL OPPORTUNITIES

THE UNIVERSITY HOSPITALS

The University is fortunate in the ownership and control of the University Hospital service. The Elliot Memorial Building, the product of a bequest of the estate of the late Dr. and Mrs. A. F. Elliot, supplemented by legislative appropriations, provides a present clinic of 192 beds. It is a fireproof and sound-proof structure and is generously equipped for teaching purposes.

The University Hospital system seeks the highest attainable results in the treatment of patients and the training of students. Its clinical service is closely coöperative with the laboratory departments.

Its service is free and patients are admitted only upon the certificate of physicians of the State vouching for the applicant's inability to pay ordinary hospital charges and physician's fees, and stating the clinical character of the case. It carries a waiting list of available patients and entertains applicants from every county of the State.

A service building has been built and equipped within the past year. It provides improved kitchens, dining-rooms, store-rooms and quarters for domestic help.

For the present, the University is obliged to employ temporary buildings for the housing of pupil and graduate nurses.

The Out-patient Department of the University Hospitals is housed, at present, in a detached building upon the west side of the Mississippi River, opposite the University Campus. Its early removal to the University Campus is assured. Its service is open to free patients during the entire year and is conducted by the clinical staff of the Faculty of the Medical School. It is subdivided into medical, surgical, gynecological, obstetrical, children's, eye, ear, nose and throat, skin, genito-urinary, nervous and mental, and orthopedic clinics. It entertained 14,363 new patients and received 51,668 patients' visits during the past year.

Sections of the senior and junior classes are assigned to these clinics daily and are trained in case-history taking, physical examinations and diagnosis, in prescription writing, and in general therapeutic methods.

AFFILIATED HOSPITALS

The City Hospital of Minneapolis and the City and County Hospital of St. Paul are closely affiliated with the Medical School of the University. One half of their clinical service is under the direction of the Faculty. Attending and consulting staffs are appointed annually upon the recommendation of the Administrative Board of the School. The combined resources of these two hospitals are represented by some 1,400 beds. Every phase of clinical service is seen in their wards and amphitheatres. To-

gether with the University Hospitals, they offer a sufficient number of internships to meet the requirements of the School.

The State Hospital for the Crippled and Deformed, at Phalen Park, has recently invited the Medical School to full participation in its clinical opportunities. Its superintending surgeon is a member of the Faculty and his assistants are largely chosen from its staff.

LIBRARY

The library of the Medical School consists of the general clinical library and of small collections of books in the department libraries of medicine, surgery, obstetrics, anatomy, pathology and bacteriology, physiology, and pharmacology. The general clinical library is housed in Millard Hall. It is open daily from 9:00 a.m. to 10:00 p.m. Departmental collections of reference literature are readily available to students and investigators. Complete files of important periodicals are preserved and over 200 current journals are received. Within recent years, a number of valuable collections of books have been given to the Medical School.

The libraries of other schools and colleges of the University, of the Hennepin County and of the Ramsey County Medical Societies, are available to students of medicine.

PRIZES AND FELLOWSHIPS

The Rollin E. Cutts Prize in Surgery.—Dr. Martha Smith Cutts, '91 medical, has established, as a memorial to her husband, the late Dr. Rollin E. Cutts, a fund of \$500, the income of which is awarded, in the form of a gold medal, to that graduating member of the senior class of the Medical School who presents the best thesis evidencing original work upon an approved surgical subject.

The Dr. J. W. Bell Prize—Dr. John W. Bell, Emeritus Professor of Clinical Medicine and Physical Diagnosis, has generously provided an annual prize of \$100, awarded to the student who evidences the highest proficiency in physical diagnosis.

The Shevlin Fellowship.—One of four fellowships, representing the income of \$10,000, established in the Graduate School by the late Thomas H. Shevlin, is open to candidates for one full year's work in acceptable medical research.

THE SUMMER SESSION

A summer session of six weeks' duration immediately follows the Commencement in June. The courses in this session are conducted in the University and Municipal Hospitals and in the laboratories and lecture halls of the Medical School.

Graduates who hold the degree of Doctor of Medicine of any recog-

nized institution, or are licensed to practice medicine in any state, may be admitted to the Summer Session of the School.

Undergraduates in medicine will be admitted to the Summer Session to courses of study offered for the following purposes: (1) to secure advanced standing in degree of the equivalence of these courses to those offered in the regular sessions; (2) to compensate for deficiencies in studies taken in other acceptable schools; (3) to remove conditions or failures in subjects which are equivalently covered in these courses. Clinical courses will be open to undergraduates only in case they are not fully filled by graduate students.

The courses of instruction offered and the schedule of tuition fees will be found in the Announcement of the Summer Session, which will be sent upon application.

THE GRADUATE SCHOOL IN MEDICINE

The Graduate School in Medicine has been established as a part of the main Graduate School of the University. It offers to suitably prepared graduates in medicine, courses covering two and three years, leading, respectively, to the Degrees of Master of Science and Doctor of Science. The adequate training of specialists in medicine is one of the main purposes of the school and for this purpose a number of teaching fellowships, under annual stipends, have been created; and an additional number of graduate scholarships, under an abatement of tuition fees, to which selected graduate students receive appointment.

The field of the Graduate School in Medicine has been extended to the inclusion of the opportunities for graduate study and medical research offered by The Mayo Foundation for Medical Education and Research established at Rochester, Minnesota. The Foundation maintains a number of fellowships and graduate students may be assigned to courses of study both at the University and in the Foundation.

A Circular of Information concerning The Graduate School in Medicine is in course of preparation.

Students in the Medical School who have received the Baccalaureate degree from this or any other approved University may become candidates for the degree of Master of Arts, Master of Science, or Doctor of Philosophy in the Graduate School. In addition to the work credited to the M.D. degree, they must pursue courses of study conforming to the regulations of the Graduate School.

Students registered in the Graduate School may elect majors or minors for the graduate degrees, for which advanced courses are provided, in anatomy, embryology, histology, neurology, pathology, bacteriology, and physiology, in the Medical School.

In all cases, students must comply with the rules and regulations of the Graduate School of the University of Minnesota, further information of which may be found in the Announcement of the Graduate School.

THE SCHOOL FOR NURSES

The School for Nurses is a department of University instruction under the control of the Medical School. It is conducted in connection with the University Hospitals. It is in charge of a Superintendent, assisted by a committee of management and by a teaching staff selected from the Faculty of the Medical School. While the undergraduates of the School for Nurses constitute in part the nursing corps of the University Hospitals, the school exists primarily for the efficient education of the nurse. It is the first school in the United States organized under direct University control.

A four years' high-school course is the minimal requirement for admission. A four months' preliminary course in foundational studies is given before entry to the hospital service. The full course covers a period of three years. It leads to the degree of Graduate in Nursing conferred, upon the recommendation of the Faculty, by the Board of Regents.

Nurses in training are received from certain affiliated hospitals for the completion of their courses of study.

For further information, call for Bulletin of The School for Nurses.

THE SCHOOL OF EMBALMING

With the coöperation of the State Funeral Directors' Association a School of Embalming has been organized and is conducted for a period of eight weeks, commencing January 3, 1916. It is under the direction of the Administrative Board of the Medical School.

Didactic and laboratory instruction is given in anatomy, bacteriology, chemistry, public health and sanitation, in autopsies, professional embalming, and funeral management. Certificates are issued to candidates successfully completing the course, which are accepted for state license.

Circular of information will be sent upon application.

THE SCHOOL OF PUBLIC HEALTH

The School of Public Health has been organized under the control of the Administrative Board of the Medical School. An executive committee has been appointed by the Board for the immediate direction of the work of the School. This committee consists of the President of the University, the Dean of the Medical School, the head of the Department of Sanitary Engineering, the ranking instructor in charge of the division of Public Health in the Medical School, and the Executive Officer of the State Board of Health. A teaching faculty will be chosen, of which one member will sit in the Administrative Board of the Medical School. The functions of the School will be broad. It will institute measures relating to the health of the University community; it will prepare and recommend courses of instruction in public health in the several colleges of the University; it will conduct courses of instruction for health officials and others; it will establish and maintain a public health museum; and will

coöperate with other agencies in the study of public health problems outside of the University. The School expects to offer courses during the coming year.

A Circular of Information will be issued later.

DEPARTMENTAL STATEMENTS

DEPARTMENT OF ANATOMY

Professors CLARENCE M. JACKSON, JOHN B. JOHNSTON, THOMAS G. LEE,
Instructors WILLIAM F. ALLEN, W. E. CAMP, J. A. MYERS; Teaching
Assistants R. T. LA VAKE, L. H. RUTLEDGE, C. A. STEWART; Student
Assistants J. A. KITTELSON, J. C. MCKINLEY, E. H. NORRIS, FLORIEN
VAUGHN.

Departmental Office, Institute of Anatomy

REQUIRED COURSES

- 1 a,b. ELEMENTARY HUMAN ANATOMY. Lectures, recitations and demonstrations. School for Nurses. 48 hours. MYERS.
- 3 a,b. GROSS HUMAN ANATOMY. Dissection, including osteology. A disarticulated skeleton loaned to every two students. Every student required to dissect lateral half of the body. Lectures and quizzes. Third year medical, 11 hours a week, first semester; 10 hours a week, second semester; total 336 hours; ten credits. JACKSON, ERDMANN, LA VAKE, MYERS.
- 5 a,b. GROSS HUMAN ANATOMY. Morphology of the various systems. Osteology. Splanchnology, with special reference to the digestive system. Dissection of the head, neck and trunk. Lectures and laboratory work. First year dental. Three periods a week, first semester; two periods a week, second semester; total 320 hours. JACKSON, ERDMANN, MYERS, STEWART.
6. HISTOLOGY AND EMBRYOLOGY. Minute structure and development of the tissues and organs. Lectures and laboratory work. First year dental. Two periods a week. LEE, ALLEN, CAMP.
51. HUMAN HISTOLOGY. Microscopic study of the various tissues and organs. Laboratory work, lectures, and recitations. Third year medical. 160 hours; five credits. SCAMMON, CAMP.
52. HUMAN EMBRYOLOGY. Development of the human body. Laboratory work, lectures, and recitations. Third year medical. Prerequisite: course 51. 96 hours; three credits. LEE, SCAMMON.
53. HUMAN NEUROLOGY. A study of the central nervous system and sense organs. Laboratory work, lectures, and recitations. Fourth year med-

ical. Prerequisite: courses 51, 52. 96 hours; three credits. JOHNSTON, ALLEN, MYERS.

ELECTIVE COURSES

111. ANATOMICAL TECHNIQUE. Microtechnique, reconstruction and museum methods, etc. Laboratory work and occasional lectures. Fourth, fifth or sixth year medical. Limited to sixteen students. 96 hours or less. LEE, ALLEN.
113. ADVANCED HISTOLOGY. A study of special preparations, including practice in the identification of unknown specimens. Fourth, fifth or sixth year medical, or graduate students. Limited to sixteen students. Prerequisite: course 51. 96 hours, or less.
114. TOPOGRAPHIC ANATOMY. Based upon a study of serial cross-sections of the human body. Laboratory work, lectures, and recitations. Fourth, fifth or sixth year medical, or graduate students. Limited to twenty-four students. Prerequisite: course 3a,b. 96 hours, or less. JACKSON.
115. FETAL ANATOMY. Study of the human fetus, with comparison of earlier embryonic and later postnatal structure. Laboratory work. Fourth, fifth or sixth year medical, or graduate students. Limited to twenty students. Prerequisites: courses 3a,b, 52. 96 hours, or less. SCAMMON.
117. IMPLANTATION OF OVUM. A study of the implantation of the ovum and the formation of the decidua in man and mammals. Lectures and laboratory work. Fourth, fifth or sixth year medical, or graduate students. Limited to twelve students. Prerequisite: course 52. 96 hours, or less. LEE.
118. APPLIED ANATOMY. Relationships, with reference to their clinical applications. Lectures and demonstrations. Fourth, fifth or sixth year medical, or graduate students. Prerequisite: course 3a,b. 48 hours. ERDMANN.
119. SPECIAL DISSECTIONS. Dissection of special regions, including preparation of museum specimens. Fourth, fifth or sixth year medical, or graduate students. Limited to twenty-four students. Prerequisite: course 3a,b. 96 hours, or less. ERDMANN.
121. EXPERIMENTAL NEUROLOGY. A study of the morphology of the central nervous system as determined by experimental methods. Fifth or sixth year medical, or graduate students. Limited to five students. Prerequisite: course 55. 96 hours, or less. ALLEN.
- 123 a,b. ADVANCED ANATOMY. Advanced work, largely individual in character, in gross anatomy, histology, or embryology. Laboratory work. Fourth, fifth or sixth year medical, or graduate students. Admission

only upon approval of instructor. Hours and credits to be arranged. JACKSON, LEE OR SCAMMON.

- 201 a,b. RESEARCH IN ANATOMY. Research work in gross or microscopic anatomy, neurology, histology, or embryology, for properly qualified students. For graduates or others upon approval of any one of the instructors. Hours and credits to be arranged. JACKSON, JOHNSTON, LEE, SCAMMON.
- 203 a,b. ANATOMICAL SEMINAR. Presentation and discussion of research work in progress in the department, together with reviews of current anatomical literature. For graduates or others upon approval of instructor. 32 hours; one credit. JACKSON.

THE DEPARTMENT OF PHYSIOLOGY

Professor ELIAS P. LYON; Associate Professors RICHARD O. BEARD, FREDERICK H. SCOTT; Assistant Professors J. F. McCLENDON, M. RUSSEL WILCOX; Instructors FRANCIS B. KINGSBURY, C. J. V. PETTIBONE; Assistants ROY E. CRUZEN, LYLE J. ROBERTS.

Departmental Office, Millard Hall

REQUIRED COURSES

- 3 a,b. ELEMENTARY HUMAN PHYSIOLOGY. Lectures and laboratory work. School for Nurses, Home Economics students and others. 96 hours. LYON, BEARD, SCOTT, and Assistants.
- *4. ELEMENTARY PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY. Lectures and laboratory work. Second year dental. 144 hours. SCOTT, BEARD, PETTIBONE and Assistants.
52. PHYSIOLOGIC CHEMISTRY. The components of the animal body; foods, digestion, the excreta. Lectures and laboratory work. Third year medical. 128 hours; four credits. PETTIBONE, KINGSBURY, McCLENDON.
53. GENERAL PHYSIOLOGY. The study of muscle, nerve, blood, circulation, and respiration. Lectures and laboratory work. Fourth year medical. 128 hours; four credits. LYON, BEARD, SCOTT, PETTIBONE, McCLENDON, KINGSBURY and Assistants.
54. GENERAL PHYSIOLOGY. The study of the nervous system and special senses; of digestion, metabolism, nutrition and excretion. Lectures and laboratory work. Fourth year medical. 128 hours; four credits. LYON, BEARD, SCOTT, WILCOX, and Assistants.

*Not given in 1915-16.

ELECTIVE COURSES.

101. URINALYSIS. Advanced methods. Fourth, fifth or sixth year. First quarter. 40 hours. PETTIBONE.
- 102 a,b. ADVANCED MAMMALIAN PHYSIOLOGY. A course of classical physiologic experiments. Fourth, fifth or sixth year. 24 hours. LYON, SCOTT, CRUZEN.
103. PHYSIOLOGY OF METABOLISM. Students are placed on known diets and the results are studied chemically. Fourth, fifth or sixth year. Second quarter. 40 hours. PETTIBONE.
- 105 a,b. PHYSICAL CHEMISTRY OF CELLS AND BIOLOGIC FLUIDS. The physical chemistry of colloids, hydrogen-ion concentration, surface tension, osmotic pressure, electric conductivity; their bearing on biochemical analysis, digestion, stimulation and anesthesia, muscular contraction, and cell division. Fourth, fifth or sixth year. Prerequisites: Animal Biology and Organic Chemistry. First semester, or both semesters offered for credit. 80 hours, each semester. McCLENDON.
- 107 a,b. ADVANCED PHYSIOLOGIC CHEMISTRY. Course arranged by instructors with qualified students for special work. Fourth, fifth or sixth year. 40 hours, either semester. PETTIBONE, KINGSBURY.
- 109 a,b. ADVANCED PHYSIOLOGY. Course arranged by instructors with qualified students on special problems in physiology or physiologic chemistry. Fourth, fifth or sixth year. 40 hours, either semester. LYON, SCOTT, McCLENDON.
110. PHYSIOLOGY OF DEVELOPMENT. The physiology of the ovum, the embryo, the fetus; the functions of menstruation, ovulation, pregnancy, parturition and lactation; the functional characteristics of birth, infancy, childhood, adolescence, maturity and old age. Fourth, fifth or sixth year. 32 hours. BEARD.
- 111 a,b. FOODS AND PRACTICAL DIETETICS. A study of human foods and food values; of the principles of food selection; of caloric indices and balanced dietaries. Exercises in the practical preparation of foods. Fourth, fifth or sixth year. Limited to twelve students. 48 hours. BEARD, THOMAS.
113. EXAMINATION OF THE EYE AND EAR. A study of advanced methods. Lectures, demonstrations and laboratory exercises. Prerequisite: course 54. Fourth, fifth or sixth year. First quarter. 24 hours. WILCOX.
114. PHYSIOLOGY OF ACCOMMODATION. A study of optical principles and methods. Lectures, demonstrations and laboratory exercises. Fourth, fifth or sixth year. 24 hours. WILCOX.

- 115 a,b. CONFERENCE COURSE IN PHYSIOLOGY. A study of the internal secretions; lymph formation, edema; the tropisms in medicine; the physiology of the stomach. Informal lectures and library study. Prerequisites: courses 52, 53 and 54. 12 hours, each quarter. LYON.
- 117 a,b. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. For instructors and advanced students. 32 hours. LYON, HIRSCHFELDER and Staff.
- 201 a,b. RESEARCH IN PHYSIOLOGY. LYON, SCOTT, McCLENDON.
- 203 a,b. RESEARCH IN PHYSIOLOGIC CHEMISTRY. KINGSBURY, PETTIBONE.

DEPARTMENT OF PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor E. D. BROWN;
Assistant Professor ROBERT A. HALL.

Departmental Office, Millard Hall

REQUIRED COURSES

1. a,b. ELEMENTARY PHARMACOLOGY. A study of the history, uses, classification and preparation of drugs; definition of descriptive terms: systems of weights and measures; methods of administration, principles of dosage, etc. Primarily for School for Nurses. 64 hours. HALL.
4. COURSE IN PHARMACOLOGY. The history, origin, nature, pharmacal preparations, and uses of drugs, including the discussion of their physiologic, pharmacologic, and therapeutic actions. Lectures, demonstrations, and recitations. Second year dental. 32 hours. HALL.
52. GENERAL PHARMACOLOGY. The principles underlying the structure, physico-chemical properties, physiologic, therapeutic and toxic actions of substances, natural or synthetic, used as medicines. Lectures and recitations. Fourth year medical. 32 hours, two credits. HIRSCHFELDER, BROWN.
54. EXPERIMENTAL PHARMACOLOGY. Illustrating the preparation and actions of medicines, their relation to chemical structure and their mode of administration. Laboratory exercises. Fourth year medical. 48 hours, one credit. HIRSCHFELDER, BROWN, HALL.
61. a,b. GENERAL PHARMACOLOGY AND THERAPEUTICS. A more detailed study of drugs important in clinical practice, covering the relations of chemical structure to physiologic and therapeutic action and modes of application in clinical medicine. Fifth year medical. 64 hours. HIRSCHFELDER, BROWN.

63. THERAPEUTIC CONFERENCE. A systematic discussion of selected cases studied from case notes. Sixth year. 16 hours. HIRSCHFELDER.

ELECTIVE COURSES

55. a,b. PRESCRIPTION WRITING. The principles of prescription writing; study of the flavoring, coloring and incompatibilities of drugs. Lectures and practical exercises. Fourth, fifth or sixth year medical; throughout the year. 16 hours. Extra time and credit may be arranged. BROWN.
57. a,b. APPLIED THERAPEUTICS. Conferences on prescription writing and treatment of cases seen by students during their work in the Dispensary. Limited to students working in the medical Dispensary. Fifth or sixth year. 6 hours. HIRSCHFELDER, BROWN.
60. EXPERIMENTAL PHARMACOLOGY. The effects of the important heart and nerve stimulants, sedatives, purgatives and antiseptics. Laboratory experiments. Primarily for dental students. 24 to 48 hours. HIRSCHFELDER, BROWN, HALL.
102. ADVANCED PHARMACOLOGY. The relation of drug action to chemical structure; the mode of action and therapeutic application of various synthetic drugs; the study of chemo-therapy. Fifth or sixth year. 32 hours. HIRSCHFELDER, BROWN, HALL.
103. a,b. EXPERIMENTAL PHARMACOLOGY. Special investigation and experimental study of one or more subjects in pharmacology, in which the student is given an opportunity of choice of the following topics:
- a. Anesthetics, general and local; the principles and dangers of anesthesia.
 - b. Stimulants and depressants of the circulation and their relation to the treatment of heart disease.
 - c. Drugs acting upon the kidneys, normal or diseased.
 - d. Urinary antiseptics and the urinary excretion of drugs.
 - e. Action and detection of poisons and their antidotes.
 - f. Detailed study of the effects in man of the common harmless drugs.
 - g. The internal secretions and gland extracts; their effect upon the action of drugs.
 - h. Action of drugs upon animal and bacterial parasites, tumors, etc.
- Fifth or sixth year. 24, 48 or 96 hours. HIRSCHFELDER, BROWN, HALL.
105. a,b. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. Reviews of recent literature bearing upon physiologic and pharmacologic subjects. Conducted by department directors, with the collaboration of the staffs and of qualified graduate or undergraduate students. 32 hours.
107. a,b. RESEARCH IN PHARMACOLOGY. HIRSCHFELDER, BROWN.

THE DEPARTMENT OF PATHOLOGY, BACTERIOLOGY, AND
PUBLIC HEALTH

Professor H. E. ROBERTSON; Associate Professors R. H. MULLIN, E. T. BELL, W. P. LARSON; Instructors MOSES BARRON, A. T. HENRICI, W. C. JOHNSON, A. C. POTTER, MARGARET WARWICK; Assistants REUBEN A. JOHNSON, RAY SHANNON.

Departmental Office, Institute of Public Health and Pathology

REQUIRED COURSES

- 1 a or b. ELEMENTARY BACTERIOLOGY. Lectures, demonstrations, and laboratory studies. School for Nurses. 32 hours. HENRICI, WARWICK.
3. DENTAL BACTERIOLOGY. Lectures and demonstrations. Second year dental. 64 hours. HENRICI, WARWICK.
4. DENTAL PATHOLOGY. Lectures, demonstrations and laboratory exercises. Second year dental. 32 hours. BELL.
6. ELEMENTARY BACTERIOLOGY. Lectures, demonstrations and laboratory exercises. Students in Home Economics and others. 96 hours, three credits. WARWICK, HENRICI.
51. GENERAL PATHOLOGY. The study of pathologic processes; of regeneration and repair; and of tumors. Fourth year medical. Prerequisite: course 51, Histology. 96 hours; four credits. ROBERTSON, BELL, BARRON, POTTER, WARWICK.
- 53 a,b. SPECIAL PATHOLOGY. Studies of museum preparations and of material from autopsies and operations; the pathology of infectious diseases, as tuberculosis, syphilis, typhoid fever, etc.; the special pathology of various organs. Fourth year medical. Prerequisite: course 51, general Pathology. 232 hours; eight credits. ROBERTSON, BELL, BARRON, POTTER, WARWICK.
55. CLINICAL PATHOLOGY. Examinations of urine, blood, sputum, stomach contents, feces, exudates and transudates. Lectures, laboratory exercises and recitations. Fifth year medical. 64 hours. JOHNSON, POTTER.
58. GENERAL BACTERIOLOGY. Preparation of culture media. The morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries. Third year medical; open to others. Prerequisites: General chemistry and botany or zoology. 96 hours; four credits. LARSON, WARWICK, HENRICI.
59. SPECIAL BACTERIOLOGY. Study of pathogenic bacteria; bacteriological methods in clinical diagnosis; principles of infection and immunity, with practical application of serum reactions. Fourth year medical;

open to others. Prerequisite: Course 58, General Bacteriology. 72 hours; three credits. LARSON, WARWICK, HENRICI.

61. a,b. COURSE IN HYGIENE. A composite course. Lectures upon the following subjects: Public Health Administration and Laws; Vital Statistics; Occupational Diseases; Transmissible Diseases; Public Health Laboratory Methods; Epidemiology; Sanitary Engineering; Laboratory Investigations of Water, Sewage, and Milk; Insects and Disease; Personal Hygiene; Dental Hygiene; School Hygiene; Infant Mortality. Sixth year medical. 64 hours. BRACKEN, MULLIN, CHESLEY, BASS, BEARD, KEENE.
63. a,b. CLINICAL PATHOLOGY. Laboratory work in sections at the Dispensary. Sixth year medical. 12 hours. WARWICK.

ELECTIVE COURSES

- 101 a,b. PATHOLOGIC TECHNIQUE. Practical work in use of general and special methods for preparation of microscopic and gross pathologic specimens. This will include practice with freezing microtome, celloidin and paraffin embedding methods, general and special stains, preparation of museum specimens, etc. Limited to ten students. Fourth-, fifth-, and sixth-year medical. Prerequisite: Course 51, General Pathology. 48 hours. Third quarter. ROBERTSON.
103. a,b. SPECIAL PROBLEMS IN BACTERIOLOGY. A study of particular groups of bacteria. The bacteriology of special organs and parts. Fifth or sixth year medical. Prerequisites: Courses 58 and 59, bacteriology, general and special. Hours to be arranged. HENRICI.
104. SPECIAL BACTERIOLOGIC TECHNIQUE. An advanced course giving additional work in bacteriology and the opportunity of working out special problems. Fifth year medical. Limited to ten students. 48 hours. LARSON.
105. COURSE IN IMMUNITY. The study of natural and acquired immunity, including experiments to show the several types of protective substances and the principles and technique of serum diagnosis. Fifth or sixth year medical. Limited to ten students in each semester. 48 hours. LARSON.
106. ADVANCED PATHOLOGY. Demonstration and study of gross pathologic specimens with practice in the rapid recognition of various gross and microscopic lesions. Limited to fifteen students. Fourth-year medical. 48 hours. BELL and Staff.
107. DIAGNOSIS OF TUMORS. Rapid diagnosis and study of tumors and other pathologic conditions simulating tumor formation. Theoretical and practical instruction. Fifth- and sixth-year medical. Prerequisite: Course 53, Special Pathology. 48 hours. First quarter. BELL.
108. GYNECOLOGICAL PATHOLOGY. A course in the study of pathologic conditions common to the diseases of women. Fifth or sixth year medical. Prerequisite: Course 53, Special Pathology. Fourth quarter. 24 hours. ADAIR, BELL.

- 109 a,b. **AUTOPSIES.*** The technique of performing autopsies and making proper records is studied and practical work furnished each student. Fifth- and sixth-year medical. Limited to nine students each quarter. 24 hours. Elective may be repeated if there are vacant places. Pathology Staff.
110. **NEUROPATHOLOGY.** A study of the pathologic conditions of nerve tissues in characteristic lesions. Fifth or sixth year medical. Prerequisite: Courses 52, Special Pathology. Fourth quarter; 24 hours. HAMILTON, BELL.
113. a,b. **CLINICAL LABORATORY COURSE.** Practical diagnostic study in the out-patient department laboratory. Limited to sections of four students. Fifth or sixth year medical. 18 hours. WOLTMANN, WARWICK.
201. a,b. **RESEARCH.** Graduate students, of the necessary preliminary training, may elect research either as majors or minors, in Pathology, or Bacteriology. Hours to be arranged. ROBERTSON, BELL, LARSON.
- 115 a,b. **MEDICAL ENTOMOLOGY.** A study of those insects, and their near relatives, which are disease-bearers or parasites of man; life-history, habits, and methods of control. Fourth, fifth or sixth year. Prerequisite: Animal Biology, Course 3-4, or equivalent. 32 hours, either semester. HOWARD.

*N. B. This elective takes the place of the formerly required autopsies.

THE DEPARTMENT OF SURGERY

Professors J. E. MOORE, ARTHUR J. GILLETTE, FRANK C. TODD; Associate Professors J. FRANK CORBETT, ARTHUR A. LAW, ARCHIBALD MACLAREN, WILLIAM R. MURRAY; Assistant Professors FRANK E. BURCH, A. R. COLVIN, WARREN A. DENNIS, EMIL S. GEIST, JOHN S. MACNIE, ARTHUR T. MANN, HARRY P. RITCHIE, JOHN T. ROGERS, FRANKLIN R. WRIGHT; Instructors JOHN S. ABBOTT, PAUL F. BROWN, CARL C. CHATTERTON, WALLACE COLE, EARLE R. HARE, J. A. JOHNSON, HORACE NEWHART, OSCAR OWRE, FREDERICK H. POPPE, FRED J. PRATT, CHARLES A. REED, ARTHUR C. STRACHAUER, HARRY B. ZIMMERMAN; Assistants HOWARD S. CLARK, E. K. GREEN, STANLEY E. KERRICK, W. J. KREMER, W. W. LEWIS, MARGARET I. SMITH, HENRY C. STUHR, ANTON J. WETHALL; Teaching Fellows G. L. McWHORTER, H. E. BINGER.

Departmental Office, Millard Hall

REQUIRED COURSES

51. **SURGICAL TECHNIQUE.** A course in operative principles. Lectures and demonstrations. Fifth year. 16 hours. STRACHAUER.

52. GENERAL SURGERY. The diseases and injuries of tendons, fasciae, bursae, blood-vessels, nerves, brain and meninges. Lectures and demonstrations. Fifth year. 48 hours. LAW.
53. PRINCIPLES OF SURGERY. A study of surgical inflammations, etc.; illustrated by gross and microscopic preparations from the living subject and from experimental sources. Lectures and demonstrations. Fifth year. 56 hours. CORBETT.
54. REGIONAL SURGERY. The practical surgery of the several regions of the body; diseases of bones, injuries and acute diseases of joints, etc. Lectures and demonstrations. Fifth year. 48 hours. MOORE.
55. GENERAL SURGERY. Fractures and dislocations. Lectures and demonstrations. Sixth year. 32 hours. LAW.
- 57 a,b. DIAGNOSTIC CLINIC. A series of clinics upon the diagnosis of surgical conditions as presented in the hospital wards. Fifth year. 32 hours. MOORE.
- 59 a,b. OPERATIVE CLINIC. A course in operative procedure conducted at the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul on Thursdays and Saturdays, throughout the year. Fifth year. 56 hours. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, DENNIS, COLVIN.
- 61 a,b. CLINICAL CLERKSHIPS. Direct observation of patients in hospital, under supervision of senior internes or teaching fellows; taking and recording of case histories and making of provisional diagnoses. Sixth year. 64 hours. Clinical Staff.
63. a,b. OPERATIVE CLINIC. A course of operations in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul, on Tuesdays, Thursdays, and Saturdays. Sixth year. 48 hours. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, DENNIS, COLVIN.
65. a,b. MINOR OPERATIVE CLINICS. Courses conducted with class sections on three days in each week at the Out-patient Department. Sixth year. 12 hours. STRACHAUER, HARE and Assistants.

ELECTIVE COURSES

101. a,b. COURSE IN MINOR SURGERY. The study of diagnosis and treatment of selected cases. Sixth year. 12 hours. STRACHAUER, HARE, and Assistants.
103. OPERATIVE COURSE ON THE CADAVER. The technique of abdominal incision and closure; of bowel suturing, appendiceal removal, kidney exploration, nephrotomy, tracheotomy, amputations, ligations, and other problems in emergency surgery. Fifth year. 32 hours. CORBETT.

104. RESEARCHES IN SURGICAL PROBLEMS. A study of approved problems, selected by students in the course, in operative, physiological, histological, and chemical methods. Fifth year. 24 hours. CORBETT.
106. COURSE IN TUMORS. The pathology and diagnosis of tumors, classified by anatomical relation. Sixth year. 24 hours. CORBETT.
108. COURSE IN EXPERIMENTAL SURGERY. A study of surgical technique by cardinal operations upon animals. Sixth year. 40 hours. CORBETT.
110. LOCAL ANESTHESIA. Methods and applications of local anesthesia in both major and minor surgery. Sixth year. 8 hours. STRACHAUER.
112. SURGICAL QUIZ. A review of surgical studies by recitation and conference. Sixth year. 16 hours. MANN.

DIVISION OF ORTHOPEDIA

REQUIRED COURSES

70. ORTHOPEDIC SURGERY. A course of clinical lectures and operations conducted in each quarter, with divisions of class, at the Hospital for Crippled and Deformed at Phalen Park. Sixth year. 24 hours. GILLETTE, CHATTERTON.
- 71 a,b. ORTHOPEDIC CLINIC. A study of cases of orthopedic disease and treatment at the Out-patient Department; three weekly sessions. Sixth year. 8 hours. GEIST, REED, COLE.

DIVISION OF GENITO-URINARY DISEASES

REQUIRED COURSES

73. GENITO-URINARY DISEASES. The etiology, diagnosis, and treatment of this group of diseases. A course of lectures. Sixth year. 16 hours. WRIGHT.
- 75 a,b. GENITO-URINARY CLINIC. The study of cases at the bedside and in the operating rooms of the several hospitals. Sixth year. 8 hours. WRIGHT, OWRE, FREEMAN.
- 77 a,b. GENITO-URINARY CLINIC. The observation, examination, and treatment of patients in the Out-patient Service at three weekly sessions. Sixth year. 8 hours. WRIGHT, OWRE and Assistants.

ELECTIVE COURSES

- 113 a,b. GENITO-URINARY DISEASES. The study of cases in the Out-patient clinics, giving the student the opportunity of examination and supervised treatment of patients. Sixth year. 8 hours. WRIGHT, OWRE, and Assistants.

- 115 a,b. ENDOSCOPY AND CYSTOSCOPY. Methods of investigation and treatment, conducted at the Out-patient Department. Sixth year. 8 hours. WRIGHT.

DIVISION OF EYE, EAR, NOSE, AND THROAT

REQUIRED COURSES

79. OPHTHALMOLOGY AND OTOTOLOGY. Disorders and diseases of the eye and ear and their corrective, medical, and surgical treatment. Lectures and demonstrations. Sixth year. 32 hours. TODD.
81. RHINOLOGY AND LARYNGOLOGY. The diagnosis and treatment of diseases of the nose and throat. Lectures and demonstrations. Sixth year. 16 hours. MURRAY.
- 83 a,b. OPERATIVE CLINICS IN EYE, EAR, NOSE, AND THROAT. Operative procedures in the clinics of the University Hospital, the Minneapolis City Hospital, and the City and County Hospital at St. Paul. Sixth year. 28 hours. TODD, BURCH, MURRAY, MACNIE.
- 85 a,b. CLINIC IN DISEASES OF THE EYE. Study and treatment of disorders and diseases of the eye, in the Out-patient Service, at three weekly sessions. Sixth year. 12 hours. MACNIE, PRATT, KERRICK.
- 87 a,b. CLINIC IN DISEASES OF THE EAR. Study and treatment of disorders and diseases of the ear, in the Out-patient Service, at three weekly sessions. Sixth year. 12 hours. NEWHART.
- 89 a,b. CLINIC IN DISEASES OF THE NOSE AND THROAT. Study and treatment of diseases of the nose and throat in the Out-patient Service, at three weekly sessions. Sixth year. 12 hours. MURRAY.

ELECTIVE COURSES

- 115 a,b. CLINIC IN DISEASES OF THE EYE. The examination of patients, diagnosis of diseased conditions and supervised treatment; alternate days, at the Out-patient Department. Sixth year. 12 hours. MACNIE, PRATT, KERRICK.
- 117 a,b. CLINIC IN DISEASES OF THE EAR. The examination of patients, diagnosis of diseased conditions and supervised treatment; alternate days, at the Out-patient Department. Sixth year. 12 hours. NEWHART.
- 119 a,b. CLINIC IN DISEASES OF THE NOSE AND THROAT. The examination of patients, diagnosis of diseased conditions and supervised treatment; alternate days, at the Out-patient Department. Three courses. Sixth year. 12 hours. MACNIE, MURRAY, PRATT, NEWHART, KERRICK.
- 121 a,b. OPERATIVE CLINICS IN EYE, EAR, NOSE AND THROAT. Conducted at the University Hospitals. Course repeated in each quarter. Limited to ten students. Sixth year. 16 hours. TODD.

- 123 a,b. REFRACTION. Lectures and practice work in refraction. Limited to twelve students, in each semester. Sixth year. 3 hours. BURCH.
126. OPHTHALMOSCOPY. The principles and practice of this method of examination of the eye. Sixth year. 16 hours. MACNIE, PRATT.

THE DEPARTMENT OF MEDICINE

Associate Professors S. MARX WHITE, ARTHUR S. HAMILTON, JULIUS PARKER SEDGWICK; Assistant Professors WALTER R. RAMSEY, SOREN P. REES, FREDERICK W. SCHLUTZ, SAMUEL E. SWEITZER; Research Professor THOMAS B. HARTZELL; Instructors EARNEST L. BAKER, JOHN BUTLER, BRONSON CROTHERS, CHARLES RALPH DRAKE, E. L. GARDNER, ERNEST M. HAMMES, EDGAR J. HUENEKENS, HARRY J. IRVINE, ANGUS W. MORRISON, HAROLD PEDERSON, ERNEST T. F. RICHARDS, FREDERICK C. RODDA, JOHN P. SCHNEIDER, CARL A. SCHERER, HENRY L. ULRICH; Assistants WILLIAM D. BEADIE, CLIFTON A. BOREEN, CARL B. DRAKE, J. A. HEDDING, ALEXANDER JOSEWITCH, FRANK J. LAWLER, A. E. LOBERG, H. A. LYSNE, F. A. OLSON, G. M. OLSON, THOMAS A. PEPPARD, CHARLES E. SMITH, GEORGE E. THOMAS; Teaching Fellows RALPH EDWIN MORRIS, ROOD TAYLOR, HENRY W. WOLTMANN.

Departmental Office, Millard Hall

REQUIRED COURSES

50. COURSE IN CASE TAKING. A study of general symptomatology; the details of clinical examination and record. Lectures, recitations, and bedside demonstrations. Fourth year. 16 hours.
52. COURSE IN MEDICAL DIAGNOSIS. The methods of physical examination and diagnosis, with practical training upon the normal and abnormal subject. Fourth year. 32 hours. REES,
51. DISEASES OF THE HEART AND BLOOD VESSELS. First quarter; fifth year. 16 hours. WHITE.
53. DISEASES OF THE BRONCHI, LUNGS, AND PLEURA. Second quarter, fifth year. 16 hours.
55. GASTRIC DISEASES AND DISEASES OF THE INTESTINAL TRACT. First semester, fifth year. 32 hours. WHITE.
54. DISEASES OF THE BLOOD AND DUCTLESS GLANDS. Fourth quarter, fifth year. 12 hours.
56. DISEASES OF THE KIDNEY, AND CONSTITUTIONAL DISEASES AND INTOXICATIONS. Third quarter, fifth year. 12 hours.
58. ACUTE INFECTIOUS DISEASES. Second semester, fifth year. 24 hours. RICHARDS.

60. MOUTH INFECTIONS. The typical infections of the oral cavity and their causal relations to disease. Fourth quarter, fifth year. 8 hours. HARTZELL.
62. MEDICAL JURISPRUDENCE. The principles of law, the rules of evidence, and the duties of physicians in medico-legal cases. Third quarter, sixth year. 16 hours. SWEENEY.
- 63 a,b. CASE ANALYSIS. A study of actual case histories by the members of the class, aided by the instructor and illustrated by the presentation of the patient, and, occasionally, by the demonstration of autopsy material. Sixth year. 64 hours. WHITE.
- 65 a,b. GENERAL CLINIC IN MEDICINE. Conducted, throughout the year, in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital, St. Paul. Fifth year. 32 hours. CLINICAL STAFF.
- 67 a,b. OUT-PATIENT CLINIC. The practical study of clinical cases in the Out-patient Service. Fifth year. 24 hours.
- 69 a,b. CLINICAL CLERKSHIPS. The personal and direct observation of patients in hospital, under the supervision of senior internes or Teaching Fellows; the taking and recording of case histories and the making of provisional diagnoses. Sixth year. 144 hours. Clinical Staff.
- 71 a,b. GENERAL MEDICAL CLINICS. Conducted throughout the year, with sections of the class, in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital of St. Paul. Sixth year. 8 hours. CLINICAL STAFF.
- 73 a,b. OUT-PATIENT CLINICS. The practical study of large numbers of patients, in the diagnosis and treatment of disease, at the Out-patient Department. Sixth year. 12 hours.

ELECTIVE COURSES

- 101 a,b. OUT-PATIENT CLINICS. The advanced study of selected cases at the Out-patient Service. Three weekly sessions throughout the year. Limited to six students. Sixth year. 12 hours.
- 103 a,b. PHYSICAL DIAGNOSIS. The study of diagnostic methods applied to selected clinical cases. Limited to four students. Fifth year. 32 hours. RICHARDS.
104. THE EXAMINATION FOR LIFE INSURANCE. The requirements of standard and special examination of applicants for life insurance. Third, quarter, fifth year. 8 hours. COOK.
105. ACUTE INFECTIOUS DISEASES. The study of the principal infections

- and their complications. Limited to 6 students. Second quarter, sixth year. 16 hours.
106. **ADVANCED PHYSICAL DIAGNOSIS.** The study of methods of diagnosis applied to diseases of the heart and lungs. Sixth year. 16 hours.
- 107 a,b. **PHYSICAL DIAGNOSIS.** A course in physical diagnosis. Limited to 4 students. Fifth year. 16 hours. GARDNER.
109. **ACUTE INFECTIOUS DISEASES, NON-CONTAGIOUS.** A comparative study of fevers. City Hospital. Limited to 6 students. First quarter, sixth year. 8 hours. REES.
- 111 a,b. **ADVANCED PHYSICAL DIAGNOSIS OF CHEST.** Practical work on tuberculous patients at Thomas' Hospital. Limited to 6 students. First quarter, sixth year. Second quarter, fifth year. 8 hours. REES.
112. **DISEASES OF RESPIRATORY TRACT.** A study of physical signs. City Hospital. Limited to 6 students. Third quarter, fifth year. 8 hours. REES.
- 113 a,b. **PROBLEMS IN ADVANCED MEDICAL DIAGNOSIS.** Limited to 4 students. Fifth year. 16 hours. ULRICH.
114. **ADVANCED WORK IN GRAPHIC RECORDING AND FUNCTIONAL DIAGNOSIS OF CARDIOVASCULAR-RENAL DISEASES,** including the use of the polygraph and electro-cardiograph and technic of tests for renal efficiency. Limited to 6 students. Third quarter, sixth year. 16 hours. WHITE and Assistants.
- 115 a,b. **CLASS CLINIC IN GENERAL MEDICINE.** University Hospital. Fifth year. 32 hours. Clinical Staff.
117. **SECTION CLINIC IN GENERAL MEDICINE.** University Hospital. Limited to 6 students for each instructor. First semester, fifth year. 16 hours. ULRICH, SCHNEIDER, MORRIS.
118. **SECTION CLINICS IN GENERAL MEDICINE.** University Hospital. Limited to 6 students for each instructor. Second semester, fifth year. 16 hours. WHITE, RIZER.

DIVISION OF NERVOUS AND MENTAL DISEASES

REQUIRED COURSES

- 75 a,b. **NEUROLOGY AND NEUROLOGIC DIAGNOSIS.** The general symptomatology and methods of examination of the nervous system; the etiology, pathology, diagnosis and treatment of the special diseases of the nervous system. Lectures, recitations and lantern demonstrations. Second and third quarter, fifth year. 24 hours. HAMILTON, HAMMES.

76. **PSYCHIATRY.** The principal data and methods of modern psychiatry, with the diagnosis and treatment of the various mental disorders. Lectures, recitations and demonstrations. Prerequisite: Course 75 a,b. Fourth quarter, fifth year. 16 hours. HAMILTON.
- 77 a,b. **CLINICAL NEUROLOGY AND PSYCHIATRY.** Section clinics in nervous and mental diseases, conducted at the University Hospital, the Minneapolis City Hospital, and the City and County Hospital, St. Paul. Fifth year. 20 hours. HAMILTON, HAMMES, MORRISON, WOLTMANN.
- 79 a,b. **ADVANCED SECTION CLINICS** conducted at the above hospitals throughout the year. Sixth year. 20 hours. HAMILTON, HAMMES.
- 81 a,b. **PERSONAL OBSERVATION AND STUDY** of cases of nervous and mental disease in the University Out-patient Service. Sixth year. 12 hours. MORRISON, WOLTMANN.

ELECTIVE COURSES

119. **PATHOLOGY OF THE NERVOUS SYSTEM.** The exhibition of gross and microscopic preparations of diseased nerve tissues; the relations existing between pathologic lesions and signs and symptoms; the chief neurone systems and the principles underlying their degeneration. Limited to four students. Prerequisites: Courses 75 a,b. and 77 a,b. First quarter, sixth year. 8 hours. HAMILTON, WOLTMANN.
121. **ORGANIC NERVOUS DISEASES.** Advanced diagnosis of nervous diseases, with the view of giving each student practical experience in all the chief diagnostic procedures employed in the study of nervous diseases. Limited to 4 students. Prerequisites: Courses 75 a,b. and 77 a,b. Second quarter, sixth year. 16 hours. HAMILTON.
122. **SYPHILITIC NERVOUS AFFECTIONS.** The diagnosis and treatment of the expressions of syphilis in the central nervous system, combining clinical and laboratory teaching and referring particularly to dementia paralytica and tabes dorsalis. Limited to 6 students. Fourth quarter, sixth year. 16 hours. HAMMES.

DIVISION OF PEDIATRICS

REQUIRED COURSES

82. **DISEASES OF CHILDREN.** The etiology, pathology, diagnosis, and treatment of diseases peculiar to, or distinctive in, children, with particular emphasis upon their differences from adult types. Fifth year. 56 hours. SEDGWICK, RAMSEY.
- 83 a,b. **CLINIC IN PEDIATRICS.** Conducted at the University Hospitals, the Minneapolis City Hospital, Lymanhurst, and the City and County Hospital, St. Paul. Fifth year. 16 hours. SEDGWICK, SCHLUTZ, RAMSEY, HUENEKENS, RODDA.

- 85 a,b. CLINIC IN CONTAGIOUS DISEASES. Conducted in the Minneapolis City Hospital and the City and County Hospital, St. Paul. Fifth year. 16 hours. SCHLUTZ, RAMSEY, HUENEKENS AND ASSISTANTS.
- 87 a,b. CLINIC IN PEDIATRICS. An advanced clinical course, conducted at the University Hospitals and at the affiliated hospitals. Sixth year. 8 hours. SEDGWICK, RAMSEY, SCHLUTZ, RODDA, TAYLOR.
- 89 a,b. OUT-PATIENT PEDIATRIC CLINIC. The practical study of the diseases of children in the Out-patient Service. Sixth year. 12 hours. SCHLUTZ, HUENEKENS, RODDA, SCHERER AND ASSISTANTS.

ELECTIVE COURSES

123. DISEASES OF THE NEW-BORN. The applications of X-ray diagnosis in children; the pathology and treatment of these disorders, with the presentation of illustrative cases. Limited to 6 students. No prerequisite course. Fifth and sixth years. 16 hours. SEDGWICK, TAYLOR.
124. NERVOUS DISEASES OF CHILDREN. The functional nervous disorders of childhood, with the observation and practice of electrical reactions in normal and abnormal children. Limited to 6 students. Fifth and sixth years. 16 hours. SEDGWICK.
125. CONTAGIOUS DISEASES. The advanced study of contagious diseases, including the practice of intubation and tracheotomy, with training upon the cadaver. Fifth and sixth years. 16 hours. RAMSEY.
126. COURSE IN INFANT FEEDING. Conducted at the St. Paul Baby Welfare Clinic of the H. Amherst Wilder Charity. Sixth year. 24 hours. RAMSEY.
- 127 a,b. THEORY AND PRACTICE OF INFANT FEEDING, INCLUDING DISEASES OF THE GASTRO-INTESTINAL TRACT. Limited to 6 students. In first three quarters, sixth year; in fourth quarter, fifth year. 8 hours. SCHLUTZ.
- 129 a,b. CONGENITAL DEFECTS AND CONSTITUTIONAL DISORDERS OF INFANCY AND CHILDHOOD. Limited to 6 students. In each quarter, fifth and sixth years. 8 hours. SCHLUTZ.
- 131 a,b. INFANT FEEDING. Limited to 4 students. Sixth year. 8 hours. HUENEKENS.
- 133 a,b. PEDIATRIC CLINIC, DISPENSARY. Limited to 4 students. Fifth and sixth years. 12 hours. HUENEKENS.
- 135 a,b. SYPHILIS IN CHILDREN. Conducted at the Dispensary and the University Hospitals. Limited to 4 students. Fifth and sixth years. SCHERER.

DIVISION OF DERMATOLOGY

REQUIRED COURSES

91. COURSE IN DERMATOLOGY. A descriptive study of the common skin diseases and of syphilis, including diagnosis and treatment. Lectures and demonstrations. Sixth year. 16 hours. SWEITZER.
- 93 a,b. CLINICAL DERMATOLOGY. Clinics conducted at the Minneapolis City Hospital and the City and County Hospital, St. Paul. Sixth year. 12 hours. SWEITZER, FREEMAN, BUTLER, IRVINE.
- 95 a,b. CLINIC IN DERMATOLOGY. The practical study of cases of skin and syphilitic disease, in the Out-patient Service. Sixth year. 8 hours. SWEITZER, BUTLER, IRVINE.

ELECTIVE COURSES

- 137 a,b. CLINIC IN DERMATOLOGY. An elective course in the study of selected cases of skin and syphilitic diseases, at the Out-patient Department. Limited to 4 students. Sixth year. 8 hours. SWEITZER, BUTLER, IRVINE.

THE DEPARTMENT OF OBSTETRICS

Professor J. C. LITZENBERG; Assistant Professors F. L. ADAIR, J. L. ROTHROCK; Instructors WILLIAM H. CONBIT, IVAR SIVERTSEN; Teaching Assistants JAMES F. HAMMOND, CHAS. L. RODGERS, L. RUTHERFORD, JALMAR H. SIMONS, CLARENCE O. MALAND, R. T. LAVAKE. Teaching Fellow S. E. MOORE.

Departmental Office, Institute of Anatomy

REQUIRED COURSES

- 51 a,b. OBSTETRICS. The physiology and pathology of pregnancy, parturition, and the puerperium. Lectures and recitations. Fifth year. 64 hours. LITZENBERG.
- 53 a,b. GYNECOLOGY. Course in gynecologic diagnosis. Lectures, demonstrations and recitations. Fifth year. 16 hours. LITZENBERG.
- 55 a,b. CLINIC IN OBSTETRICS AND GYNECOLOGY. Section clinics at the University, City, and City and County Hospitals. Fifth year. 20 hours. LITZENBERG, ROTHROCK, ADAIR.
- 57 a,b. OBSTETRICS. A study of the pathology of pregnancy and parturition and of the puerperium. Lectures, demonstrations, and case analysis. Sixth year. 32 hours. LITZENBERG, ADAIR.
- 59 a,b. GYNECOLOGY. A study of the diseases of women. Lectures, demonstrations, and case analysis. Sixth year. 32 hours. LITZENBERG, ADAIR.

- 61 a,b. CASE ANALYSIS. A course in the analytical study of cases presented to the class in obstetrics and gynecology. Sixth year. 16 hours. LITZENBERG.
- 63 a,b. OPERATIVE OBSTETRICS. Course of obstetric operations on the manikin. Lectures, demonstrations and practice by the student. Sixth year. 8 hours. LITZENBERG.
- 65 a,b. CLINIC IN OBSTETRICS AND GYNECOLOGY. Demonstration, diagnosis and treatment of cases in the Out-patient Department, giving the student opportunity to examine and study each one. Sixth year. 12 hours. ADAIR AND ASSISTANTS.
- 67 a,b. CLINIC IN OBSTETRICS AND GYNECOLOGY. Demonstration, diagnosis, and treatment of cases. Clinics conducted in the University Hospital, the City Hospital of Minneapolis and the City and County Hospital in St. Paul. Sixth year. 24 hours. LITZENBERG, ROTHROCK, ADAIR.
- 69 a,b. CLINICAL CLERKSHIPS. The personal and direct observation of patients in hospital, under supervision; the taking and recording of case histories and the making of provisional diagnoses. Sixth year. 16 hours. LITZENBERG, MOORE.
- 71 a,b. PARTURITION CLINICS. Conducted in the University Hospital and Out-patient service, the City Hospital of Minneapolis, and the City and County Hospital of St. Paul. Fifth and sixth years. LITZENBERG, ADAIR, AND ASSISTANTS.

ELECTIVE COURSES

- 101 a,b. SEMINAR IN OBSTETRICS. Offering opportunities of advanced study. Limited to eight students. Sixth year. 8 hours. LITZENBERG.
- 103 a,b. SEMINAR IN GYNECOLOGY. Offering opportunities of advanced study in Gynecology. Limited to eight students. Sixth year. 8 hours. LITZENBERG.
- 105 a,b. SPECIAL CLINICAL COURSES. A study in the diagnosis and treatment of diseases of women and of obstetrical conditions. Course repetitively conducted at the Out-patient Department; the clinic offering a large number of cases for examination daily. Sixth year. 12 hours. ADAIR.
- 107 a,b. OBSTETRICS AND GYNECOLOGIC PATHOLOGY. Limited to six students, in the pathologic study of cases. Fifth and sixth years. 24 hours. ADAIR.
- 109 a,b. OPERATIVE GYNECOLOGY. Operative clinics, lectures and demonstrations in the operating room. Sixth year. 12 hours. LITZENBERG.
- 111 a,b. CLINICAL OBSTETRICS AND GYNECOLOGY. Course in diagnosis and

treatment, three days per week throughout the year (11 mos.) at the Out-patient Department, offered to teaching fellows and graduate scholars. ADAIR.

113 a,b. SAME AS ABOVE on alternating days.

201 a,b. ADVANCED OBSTETRICS AND GYNECOLOGY. A course extending over three years of eleven months, consisting of constant service in the wards of the University Hospital and Out-patient Department with clinical and laboratory research. Offered only to Teaching Fellows. LITZENBERG.

ROENTGENOLOGY

An elective course in Roentgenology, which is not a departmentalized subject, will be offered to sixth-year students. It will occupy eight hours during one quarter in the first semester.

Univ. of Minn.

C
M66uZme
1916/17

Med. Sch.

1916-17

Bulletin of The University of Minnesota

THE MEDICAL SCHOOL

1916-1917

UNIVERSITY OF ILLINOIS LIBRARY

UNIVERSITY OF ILLINOIS

JUL 21 1916

PRESIDENT'S OFFICE



VOL. XIX, NO. 8, JUNE 1916

Entered at the Post-Office
in Minneapolis as second-class matter
Minneapolis, Minn.

1916							1917													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	..	..	..	..	1	..	1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	29	30	31	..	..	..	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
AUGUST							FEBRUARY							AUGUST						
..	..	1	2	3	4	5	..	..	..	..	1	2	3	..	..	..	1	2	3	4
6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11
13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18
20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25
27	28	29	30	31	..	..	25	26	27	28	..	..	..	26	27	28	29	30	31	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
..	..	1	2	3	4	5	..	..	..	..	1	2	3	..	..	..	..	..	..	1
3	4	5	6	7	8	9	..	5	6	7	8	9	10	2	3	4	5	6	7	8
10	11	12	13	14	15	16	11	12	13	14	15	16	17	9	10	11	12	13	14	15
17	18	19	20	21	22	23	18	19	20	21	22	23	24	16	17	18	19	20	21	22
24	25	26	27	28	29	30	25	26	27	28	29	30	31	23	24	25	26	27	28	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..
OCTOBER							APRIL							OCTOBER						
1	2	3	4	5	6	7	1	2	3	4	5	6	7	..	1	2	3	4	5	6
8	9	10	11	12	13	14	8	9	10	11	12	13	14	..	7	8	9	10	11	12
15	16	17	18	19	20	21	15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31	..	..	..	..	29	30	..	..	..	..	..	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
NOVEMBER							MAY							NOVEMBER						
..	..	..	1	2	3	4	..	..	1	2	3	4	5	..	..	..	..	1	2	3
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10
12	13	14	15	16	17	18	13	14	15	16	17	18	19	11	12	13	14	15	16	17
19	20	21	22	23	24	25	20	21	22	23	24	25	26	18	19	20	21	22	23	24
26	27	28	29	30	..	..	27	28	29	30	31	..	..	25	26	27	28	29	30	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
DECEMBER							JUNE							DECEMBER						
..	..	..	..	..	1	2	..	..	..	..	..	1	2	..	..	..	..	..	..	1
3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	24	25	26	27	28	29	30	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..

UNIVERSITY CALENDAR

1916-1917

The University year covers a period of thirty-eight weeks. Commencement Day is always the second Thursday in June.

1916

September	13	Wednesday	Registration closes except for new students
September	13-20	Week	Fees payable except for new students
September	19-26	Week	Examinations for the removal of conditions (except Colleges of Agriculture and Forestry), entrance examinations, registration of new students, and payment of fees.
September	27	Wednesday	First semester begins
October	2	Monday	Agricultural College, farm experience examinations
October	2	Monday	School of Agriculture, first term begins
October	5	Thursday	Senate meeting, 4:00 p.m.
November	6	Monday	Dairy School opens
November	7	Tuesday	Election day; a holiday
November	22	Wednesday	Medical School second quarter begins
November	29	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	2	Saturday	Dairy School closes
December	4	Monday	Thanksgiving recess ends 8:00 a.m.
December	4-9	Week	Second semester condition examinations, Colleges of Agriculture and Forestry
December	4-9	Week	Short course for ice-cream makers
December	7	Thursday	Senate meeting, 4:00 p.m.
December	22	Friday	Christmas vacation begins 9:00 p.m.
December	22	Friday	School of Agriculture, first term closes

1917

January	1-6	Week	Farmers' Short Course
January	3	Wednesday	Christmas vacation ends 8:00 a.m.
January	3	Wednesday	School of Embalming begins, eight weeks' session
January	9	Tuesday	School of Agriculture, second term begins
January	24	Wednesday	Second semester registration closes, except for new students
January	29	Monday	Final examinations begin
January	31	Wednesday	Payment of fees for second semester closes, except for new students
February	1	Thursday	Senate meeting, 4:00 p.m.

February	5-6	Monday-Tues.	Registration and payment of fees for new students
February	7	Wednesday	Second semester begins
February	12	Monday	Lincoln's Birthday; a holiday
February	22	Thursday	Washington's Birthday; a holiday
March	28	Wednesday	School of Agriculture closes
April	2-7	Week	Junior Short Course
April	5	Thursday	Easter recess begins 9:00 p.m.
April	11	Wednesday	Easter recess ends 8:00 a.m.
April	11	Wednesday	Medical School fourth quarter begins
April	16-21	Week	Condition examinations in certain colleges
May	1	Tuesday	Traction Engineering Course begins
May	3	Thursday	Senate meeting, 4:00 p.m.
May	30	Wednesday	Memorial Day; a holiday
June	1	Friday	Final examinations begin 2:00 p.m.
June	9	Saturday	Second semester closes
June	10	Sunday	Baccalaureate service
June	11	Monday	Senior Class Day exercises
June	11-18	Week	Military Encampment, Fort Snelling
June	13	Wednesday	Alumni Day
June	14	Thursday	Forty-fifth Annual Commencement
June	15	Friday	Summer vacation begins
June	18	Monday	Summer Session begins

The University year for 1917-1918 will begin Tuesday, September 18.

THE MEDICAL SCHOOL

THE ADMINISTRATIVE BOARD

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President
ELIAS POTTER LYON, Ph.D., M.D., Dean, and Director of the Department
of Physiology
RICHARD OLDING BEARD, M.D., Assistant Dean and Secretary of the Med-
ical School
LOUIS B. BALDWIN, M.D., Superintendent of the University Hospitals
LEONARD G. ROWNTREE, M.D., Chief of the Department of Medicine
JAMES E. MOORE, M.D., Chief of the Department of Surgery
CLARENCE MARTIN JACKSON, M.S., M.D., Director of the Department of
Anatomy
JENNINGS C. LITZENBERG, B.S., M.D., Chief of the Department of Ob-
stetrics and Gynecology
ARTHUR D. HIRSCHFELDER, B.S., M.D., Director of the Department of
Pharmacology
HAROLD E. ROBERTSON, B.A., M.D., Acting Director of the Department of
Pathology, Bacteriology, and Public Health
FRANK C. TODD, M.D., Chief of the Department of Ophthalmology and
Oto-Laryngology
JULIUS PARKER SEDGWICK, B.S., M.D., Chief of the Department of Pedi-
atrics
EMIL S. GEIST, M.D., Member-Elect, Representing the Faculty
ROBERT A. HALL, Ph.D., Member-Elect, Representing the Faculty

FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President 1005 5th St. S. E.
CYRUS NORTHROP, LL.D., President, Emeritus 519 10th Ave. S. E.
AMOS W. ABBOTT, M.D., Emeritus Professor of Gynecology
1717 Marquette Ave.
EVERTON J. ABBOTT, B.A., M.D., Emeritus Professor of Clinical Medicine
425 Dayton Ave., St. Paul
JOHN W. BELL, M.D., Emeritus Professor of Clinical Medicine and Physi-
cal Diagnosis 5127 Lake Harriet Blvd.
*CHARLES A. WHEATON, M.D., Emeritus Professor of Surgery
C. EUGENE RIGGS, M.A., M.D., Emeritus Professor of Mental and Ner-
vous Diseases 10 Crocus Hill, St. Paul
THOMAS S. ROBERTS, M.D., Emeritus Professor of Pediatrics
2303 Pleasant Ave.

* Deceased

- JAMES T. CHRISTISON, M.D., Emeritus Professor of Pediatrics
535 Lowry Bldg., St. Paul
-
- FRED L. ADAIR, B.S., M.D., Assistant Professor of Obstetrics and Gynecology
820 Donaldson Bldg.
- LOUIS B. BALDWIN, M.D., Superintendent of University Hospitals
509 E. River Road
- MOSES BARRON, B.S., M.D., Assistant Professor of Pathology
763 Holly Ave., St. Paul
- RICHARD OLDING BEARD, M.D., Assistant Dean and Secretary and Associate Professor of Physiology
University of Minnesota
- ELEXIOUS T. BELL, B.S., M.D., Associate Professor of Pathology
979 Fourteenth Ave. S. E.
- HENRY M. BRACKEN, M.D., L.R.C.S., Professorial Lecturer on Hygiene and Public Health
1010 Fourth St. S. E.
- FRANK S. BISSELL, M.D., Assistant Professor of Roentgenology
4412 Lake Harriet Bvd.
- EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology
3525 3d Ave. S.
- FRANK E. BURCH, M.D., Assistant Professor of Diseases of the Eye, Ear, Nose and Throat
930 Lowry Bldg., St. Paul
- ALEXANDER R. COLVIN, M.D., Assistant Professor of Surgery
630 Lowry Bldg., St. Paul
- HENRY WIREMAN COOK, B.A., M.D., Lecturer on Life Insurance
Auditorium Bldg.
- J. FRANK CORBETT, M.D., Associate Professor of Experimental Surgery
4401 E. Lake Harriet Blvd.
- WARREN A. DENNIS, B.L., M.D., Assistant Professor of Surgery
942 Lowry Bldg., St. Paul
- CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy
612 9th Ave. S. E.
- GEORGE B. FRANKFORTER, Ph.D., Dean of the School of Chemistry
525 East River Road
- EMIL S. GEIST, M.D., Assistant Professor of Orthopedic Surgery
614 Syndicate Bldg.
- JAMES S. GILFILLAN, M.D., Associate Professor of Medicine
942 Lowry Bldg., St. Paul
- ARTHUR J. GILLETTE, M.D., Professor of Orthopedic Surgery, in Charge of Division
Seven Corners, St. Paul
- ROBERT A. HALL, Ph.D., Assistant Professor of Pharmacology
602 Essex St. S. E.
- ERNEST M. HAMMES, M.D., Assistant Professor of Nervous and Mental Diseases
1010 Lowry Bldg. St. Paul
- ARTHUR S. HAMILTON, B.S., M.D., Professor, in charge of Division of Nervous and Mental Diseases
513 Pillsbury Bldg.
- THOMAS B. HARTZELL, D.M.D., M.D., Research Professor in Mouth Infections, for 1916-17
716 Donaldson Bldg.

- ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology and
Director of the Department 2113 Oliver Ave. S.
CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and Di-
rector of the Department 428 Walnut St. S. E.
JOHN B. JOHNSTON, Ph.D., Dean of the College of Science, Literature,
and the Arts, and Professor of Comparative Neurology
1115 5th St. S. E.
WINFORD P. LARSON, M.D., Associate Professor of Bacteriology
614 9th Ave. S. E.
ARTHUR A. LAW, M.D., Associate Professor of Surgery
420 Syndicate Bldg.
THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy
509 E. River Road
JENNINGS C. LITZENBERG, B.S., M.D., Professor of Obstetrics and Gynecology and Chief of the Department 910 Donaldson Bldg.
ELIAS P. LYON, Ph.D., M.D., Dean, Professor of Physiology and Director
of the Department 421 Union St. S. E.
ARCHIBALD MACLAREN, B.S., M.D., Associate Professor of Surgery
914 Lowry Bldg., St. Paul
JOHN F. MCCLENDON, Ph.D., Assistant Professor of Physiology
715 University Ave. S. E.
JOHN S. MACNIE, B.A., M.D., Assistant Professor of Ophthalmology and
Oto-Laryngology 506 Donaldson Bldg.
ARTHUR T. MANN, B.S., M.D., Associate Professor of Surgery
910 Donaldson Bldg.
JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Department
2200 Kenwood Blvd.
ANGUS W. MORRISON, B.A., M.D., Assistant Professor of Nervous and
Mental Diseases 513 Pillsbury Bldg.,
WILLIAM R. MURRAY, Ph.B., M.D., Associate Professor of Ophthalmology
and Oto-Laryngology 621 Syndicate Bldg.
OSCAR OWRE, M.D., C.M., Assistant Professor of Urology
707 Masonic Temple
HORACE NEWHART, B.A., M.D., Assistant Professor of Oto-Laryngology
910 Donaldson Bldg.
LOUISE M. POWELL, R.N., Superintendent of the School for Nurses
417 Delaware St. S. E.
WALTER R. RAMSEY, M.D., Associate Professor of Pediatrics
942 Lowry Bldg., St. Paul
SØREN P. REES, B.S., M.D., Assistant Professor of Medicine
1964 Penn Ave. S.
HARRY P. RITCHIE, Ph.B., M.D., Assistant Professor of Surgery
914 Lowry Bldg., St. Paul
HAROLD E. ROBERTSON, B.A., M.D., Professor of Pathology and Acting
Director of Department of Pathology, Bacteriology, and Public
Health 507 Essex St. S. E.
JOHN T. ROGERS, M.D., Associate Professor of Surgery
342 Lowry Bldg., St. Paul

- JOHN L. ROTHROCK, M.A., M.D., Associate Professor of Obstetrics and Gynecology 514 Lowry Bldg., St. Paul
- LEONARD G. ROWNTREE, M.D., Professor of Medicine and Chief of the Department 517 Essex St. S. E.
- RICHARD E. SCAMMON, Ph.D., Professor of Anatomy 215 Harvard St. S. E.
- FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Physiology 1307 6th St. S. E.
- JULIUS PARKER SEDGWICK, B.S., M.D., Professor of Pediatrics and Chief of the Department 614 Syndicate Bldg.
- FREDERIC W. SCHLUTZ, B.A., M.D., Assistant Professor of Pediatrics 820 Donaldson Bldg.
- ARTHUR C. STRACHAUER, M.D., Assistant Professor of Surgery 412 Syndicate Bldg.
- ARTHUR A. SWEENEY, B.A., M.D., Professor of Medical Jurisprudence 821 Lowry Bldg.
- SAMUEL E. SWEITZER, M.D., Assistant Professor, in charge of Division of Dermatology 625 Syndicate Bldg.
- FRANK C. TODD, M.D., Professor of Ophthalmology and Oto-Laryngology, and Chief of the Department 506 Donaldson Bldg.
- HENRY L. ULRICH, B.S., M.D., Assistant Professor of Medicine 408 Syndicate Bldg.
- S. MARX WHITE, B.S., M.D., Professor of Medicine 910 Donaldson Bldg.
- M. RUSSEL WILCOX, M.D., Assistant Professor of Physiology 802 Donaldson Bldg.
- FRANKLIN R. WRIGHT, M.D., Assistant Professor, in charge of Division of Urology 707 Donaldson Bldg.
- FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy 3305 2d Ave. S.

- JOHN S. ABBOTT, B.A., M.D., Instructor in Surgery 914 Lowry Bldg., St. Paul
- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology 3348 Prospect Terrace S. E.
- JOHN M. ARMSTRONG, M.D., Instructor in Dermatology and Syphilis 1040 Lowry Bldg., St. Paul
- EARNEST L. BAKER, M.D., Instructor in Medicine 503 Donaldson Bldg.
- ANNE G. BENTON, B.A., Instructor in Bacteriology and Pathology 2024 Queen Ave S.
- CLIFTON A. BOREEN, B.S., M.D., Instructor in Dermatology 416 Syndicate Bldg.
- PAUL F. BROWN, B.A., M.D., Instructor in Surgery 636 Syndicate Bldg.
- JOHN BUTLER, M.D., Instructor in Dermatology 403 Pillsbury Bldg.
- WALTER E. CAMP, M.A., Instructor in Anatomy 112 Church St. S. E.
- CARL C. CHATTERTON, M.D., Instructor in Orthopedic Surgery Seven Corners, St. Paul

- HOWARD S. CLARK, B.S., M.D., Instructor in Ophthalmology and Oto-Laryngology 616 Syndicate Bldg.
- WALLACE COLE, M.D., Instructor in Orthopedic Surgery 1004 Lowry Bldg., St. Paul
- WILLIAM H. CONDIT, B.S., M.D., Instructor in Obstetrics 2205 Kenwood Pkwy.
- PAUL B. COOK, M.D., Instructor in Dermatology and Syphilis 710 Lowry Bldg., St. Paul
- BRONSON CROTHERS, B.A., M.D., Instructor in Pediatrics 1004 Lowry Bldg., St. Paul
- CHARLES R. DRAKE, M.D., Instructor in Medicine 1037 Andrus Bldg.
- EDWIN L. GARDNER, B.S., M.D., Instructor in Medicine 1011 E. River Road
- ALEXANDER R. HALL, M.D., C.M., Instructor in Medicine 535 Lowry Bldg., St. Paul
- EARLE R. HARE, B.A., M.D., Instructor in Surgery 623 Syndicate Bldg.
- ARTHUR T. HENRICI, M.D., Instructor in Pathology and Bacteriology and Research Assistant in Mouth Infections 939 14th Ave. S. E.
- EDGAR J. HUENEKENS, B.A., M.D., Instructor in Pediatrics 803 Physicians and Surgeons Bldg.
- HARRY G. IRVINE, M.D., Instructor in Dermatology 601 Syndicate Bldg.
- WILLIAM C. JOHNSON, B.A., M.D., Instructor in Pathology 313 8th Ave. S. E.
- JAMES A. JOHNSON, M.D., Instructor in Surgery 420 Syndicate Bldg.
- FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiologic Chemistry 209 State St. S. E.
- RAE T. LA-VAKE, B.A., M.D., Instructor in Obstetrics and Gynecology 910 Donaldson Bldg.
- WILLIAM W. LEWIS, M.D., Instructor in Ophthalmology and Oto-Laryngology 836 Lowry Bldg., St. Paul
- CLARENCE O. MALAND, B.A., M.D., Instructor in Obstetrics and Gynecology Physicians' and Surgeons' Bldg.
- JAY A. MYERS, Ph.D., Instructor in Anatomy 1100 14th Ave. S. E.
- HAROLD PEDERSON, B.A., M.D., Instructor in Medicine 310 Pillsbury Bldg.
- CHAUNCEY J. V. PETTIBONE, Ph.D., Instructor in Physiologic Chemistry 611 Delaware St. S. E.
- FREDERICK H. POPPE, B.A., M.D., Instructor in Surgery 820 Donaldson Bldg.
- ALBERT C. POTTER, M.D., Instructor in Pathology and Bacteriology 2725 3d Ave. S.
- FRED J. PRATT, M.D., Instructor in Ophthalmology and Oto-Laryngology 328 Central Ave.
- CHARLES A. REED, B.S., M.D., Instructor in Orthopedic Surgery 420 Syndicate Bldg.
- ERNEST T. F. RICHARDS, M.D., C.M., Instructor in Medicine 744 Lowry Bldg., St. Paul
- ROBERT I. RIZER, M.D., Instructor in Medicine 610 5th St. S. E.

FREDERICK C. RODDA, M.D., Instructor in Pediatrics

2512 Bryant Ave. S.

JOHN P. SCHNEIDER, M.D., Instructor in Medicine 414 Syndicate Bldg.

JALMAR H. SIMONS, B.S., M.D., Instructor in Obstetrics

1020 Donaldson Bldg.

CHESTER A. STEWART, M.A., Instructor in Anatomy 1819 4th St. S. E.

MARION A. TEBBETS, B.A., Director of the Department of Social Service

Glen Lake, Minn.

MARGARET WARWICK, B.S., M.D., Instructor in Pathology and Bacteriology

1516 7th St. S. E.

FREDERICK W. WITTICH, B.A., M.D., Instructor in Medicine

703 Pillsbury Bldg.

HARRY B. ZIMMERMAN, M.D., Instructor in Surgery

342 Lowry Bldg., St. Paul

Members of the faculties of other schools giving instruction to medical students:

IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry

EVERHART P. HARDING, Ph.D., Associate Professor of Chemistry

WILLIAM H. HUNTER, Ph.D., Assistant Professor of Chemistry

TEACHING ASSISTANTS

E. C. ALBRITTON, B.S., Assistant in Anatomy

EDWARD D. ANDERSON, B.A., Assistant in Physiology 929 8th St. S. E.

L. W. BARRY, M.D., Assistant in Obstetrics and Gynecology

820 Donaldson Bldg.

WILLIAM D. BEADIE, M.D., C.M., Assistant in Pediatrics

949 Lowry Bldg., St. Paul

TOBIAS L. BIRNBERG, M.D., Assistant in Pediatrics

1035 Lowry Bldg., St. Paul

WILLIAM C. CARROLL, B.S., M.D., Assistant in Surgery

1315 Cleveland Ave. N., St. Paul

WYMAN C. COLE, B.S., Assistant in Anatomy

1228 5th St. S. E.

ROY E. CRUZEN, Assistant in Physiology

415 Franklin Ave. W.

EDWARD J. ENGBERG, M.D., Assistant in Nervous and Mental Diseases

1044 Lowry Bldg., St. Paul

CHARLES W. FOGARTY, M.D., Assistant in Ophthalmology and Oto-Laryngology

942 Lowry Bldg., St. Paul

EUGENE K. GREEN, M.D., Assistant in Surgery

808 Physicians' and Surgeons' Bldg.

WILLIAM A. GREY, DD.S., Research Assistant in Mouth Infections

923 Lowry Bldg., St. Paul

CHARLES A. HALLBERG, M.D., Assistant in Surgery 1525 Franklin Ave. E.

JAMES HAMMOND, M.D., C.M., Assistant in Obstetrics

334 Lowry Bldg., St. Paul

JOSEPH A. HEDDING, M.D., Assistant in Pediatrics

500 Physicians' and Surgeons' Bldg.

- JOHN P. HIEBERT, M.D., Assistant in Surgery 429 Syndicate Bldg.
 E. MENDELSON JONES, M.D., Assistant in Obstetrics and Gynecology
 544 Lowry Bldg
 KANO IKEDA, M.D., Assistant in Bacteriology St. Barnabas Hospital
 STANLEY E. KERRICK, M.D., Assistant in Ophthalmology and Oto-Laryn-
 gology 517 Syndicate Bldg.
 WALTER J. KREMER, M.D., Assistant in Urology 625 Plymouth Ave. N.
 JOHN A. KITTELSON, B.S., Assistant in Anatomy 713 16th Ave. S. E.
 RALPH T. KNIGHT, A.B., M.D., Assistant in Pediatrics
 623 Syndicate Bldg.
 JOHN W. LEE, M.D., M.C., Assistant in Ophthalmology and Oto-Laryn-
 gology 513 Syndicate Bldg.
 ADOLPH E. LOBERG, M.D., Assistant in Mental and Nervous Diseases
 1909 Washington Ave. S.
 HENRY A. LYSNE, B.S., M.D., Assistant in Pediatrics 700 20th Ave. N.
 THOMAS J. MALONEY, M.D., Assistant in Ophthalmology and Oto-Laryn-
 gology 436 Lowry Bldg., St. Paul
 JOHN C. MCKINLEY, B.S., Assistant in Anatomy 2423 Irving Ave. S.
 JOSEPH C. MICHAELS, B.S., M.D., Assistant in Nervous and Mental Dis-
 eases 1019 Lowry Bldg., St. Paul
 HARRY P. NORDLEY, M.D., Assistant in Medicine 401 Cedar Ave.
 EDGAR H. NORRIS, B.S., Assistant in Anatomy 2313 Aldrich Ave. S.
 JAMES M. NORTHINGTON, M.D., Assistant in Medicine Campus Club
 GUSTAV A. RENZ, M.D., Assistant in Obstetrics and Gynecology
 Lowry Bldg., St. Paul
 LYLE J. ROBERTS, B.A., Assistant in Physiology 329 Union St. S. E.
 WILLMAR C. RUTHEFFORD, M.D., Assistant in Obstetrics and Gynecology
 618 Lowry Bldg., St. Paul
 LLOYD H. RUTLEDGE, A.B., Assistant in Anatomy University of Minnesota
 RAY SHANNON, M.S., Assistant in Pathology and Bacteriology
 Hillcrest Hospital
 JOHN H. SCHROEDER, B.S., M.D., Assistant in Medicine
 1226 Marquette Ave.
 CHARLES E. SMITH, JR., M.D., Assistant in Pediatrics
 741 Lowry Bldg., St. Paul
 MARGARET I. SMITH, M.D., Assistant in Ophthalmology and Oto-Laryn-
 gology 1940 Emerson Ave. S.
 ALBERT M. SNELL, B.S., Assistant in Physiology
 509 Washington Ave. S. E.
 FREDERICK J. SOUBA, B.S., M.D., Assistant in Obstetrics and Gynecology
 1007 Donaldson Bldg.
 HENRY C. STUHR, M.D., Assistant in Surgery 628 Syndicate Bldg.
 H. JOURNEY WELLES, M.D., Assistant in Ophthalmology and Oto-Laryn-
 gology 307 Masonic Temple
 ANTON G. WETHALL, B.S., M.D., Assistant in Urology 325 Cedar Ave.
 FLORIEN VAUGHN, B.A., Assistant in Anatomy 421 Oak St. S. E.

TEACHING FELLOWS

HENRY E. BINGER, M.D., in Department of Ophthalmology and Oto-Laryngology

DONALD F. CAMERON, M.A., M.D., in Department of Surgery

SAMUEL T. FORSYTHE, B.A., M.D., in Department of Ophthalmology and Oto-Laryngology

FLOYD GRAVE, B.S., M.D., in Department of Medicine

GOLDER L. MCWHORTER, B.S., M.D., in Department of Surgery

SETH E. MOORE, LL.B., M.D., in Department of Obstetrics

RALPH EDWIN MORRIS, M.S., M.D., in Department of Medicine

ROOD TAYLOR, M.D., in Department of Pediatrics

HENRY W. WOLTMANN, B.S., M.D., in Division of Mental and Nervous Diseases

GRADUATE SCHOLARS

HENRY J. FRIESEN, M.D., in Department of Ophthalmology and Oto-Laryngology

GENERAL INFORMATION

The twenty-ninth annual course of study in the Medical School begins Wednesday, September 27, 1916, and covers a period of nine months. A summer session of six weeks opens June 12, 1916.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL

(a) Two years of high school Latin, as part of the high school course required for entrance to the College of Science, Literature, and the Arts.*

(b) At least two years, or sixty credits, of prescribed and elective study in the College of Science, Literature, and the Arts of this University or of any other approved institution. The prescribed academic studies preliminary to medicine are: rhetoric, six credits; physics, eight credits; general chemistry and qualitative analysis, or these subjects combined with organic chemistry, twelve credits; zoology, six credits; and a reading knowledge of German. This two or more years of collegiate study leads, upon the satisfactory completion of one or two years of medical study, to the baccalaureate degree in science or in arts.

Students holding the bachelor's degree of any recognized college may submit credentials of practical equivalence in cultural studies, provided an adequate knowledge of biology, chemistry, and physics has been attained, and a reading knowledge of German is demonstrated.

REGISTRATION

Registration is conducted under general University rules, in the office of the Registrar. Registration is reported to the office of the Dean of the Medical School. Students will interview the Students' Work Committee for classification and arrangement of courses. Students will not be permitted to register later than the tenth day from the opening of the semester, unless exceptional causes of delay are presented and are accepted by the Students' Work Committee.

On account of the present limited capacity of the Medical School, the registration of incoming (third year) classes has been limited to eighty. All applicants for admission will fill out and submit to the Registrar an application form. These applications should be entered so soon as the candidate's entrance requirements are completed. They will not be received later than July 24, 1916. If preparatory work has been done elsewhere than at the University of Minnesota, application must be accompanied by certified credentials of high school and college courses.

* Candidates who offer a reading knowledge of both German and French may be excused, at the discretion of the Students' Work Committee, from one or more years of Latin.

The Students' Work Committee will meet to consider applicants for admission at 9 a.m. June 5, 1916, and at 9 a.m. July 25, 1916. A personal interview is desirable. If this is impossible, recommendations as to personal fitness, preparation, etc., must be submitted, with credentials.

Candidates will be selected with reference (a) to their full compliance with existing requirements; (b) to the quality of their preparatory work; (c) to their general knowledge and (d) to their personal fitness. They will be submitted to competitive examination, at the discretion of the committee, when it is deemed necessary either to establish their fitness or to determine their comparative merits. Such examinations will be held upon the dates given above. They may cover any of the required pre-medical subjects and will include tests of experience and general information.

Existing published requirements for admission to the Medical School will be respected. Holders of the degree of B.A. or B.S. who have covered the required subjects, and those who have successfully completed two or three years of collegiate work, including full credits and required subjects, will be entitled, other things being equal, to first consideration for existing vacancies at the date of their application.

No applicant carrying deficiencies in more than six collegiate credits, (including a reading knowledge of German, or French,* and the required two years of high-school Latin), will be considered. Such reading knowledge of these modern languages will be tested upon the above examination dates.

All other qualifications being equal, residents of Minnesota will be given prior opportunity in any vacancies existing at the date of their application.

If an entrance condition is allowed, it must be removed, invariably, before the opening of the succeeding school year.

FEES

The annual tuition fee in the Medical School is \$150, payable in two installments, at the opening of the first and second semesters. No tuition fee is charged for the final hospital or advanced laboratory year, which is now requisite to the degree.

A deposit of \$10 in the first year, and of \$5 in succeeding years, is required as a caution fee. This fee covers the cost of unnecessary damage to school buildings, of breakage and loss of laboratory apparatus and material, penalties for late registration or late payment of fees, fees for condition examinations, and rentals of post-office box and lockers. Any balance remaining from this deposit will be returned to the student at the close of each year.

Students taking less than the regular course may arrange their fees upon a scale of \$3 for each semester-hour's work.

* After 1916-17 German will be specifically required.

Repetition of work in course demands the repetitional payment of fees.

A fee of \$1 is required for condition examinations; and a fee of \$5 for special examinations.

A fee of \$1 is required for attendance of students upon the clinical service of the City and County Hospital of St. Paul. It is payable to the Hospital.

MICROSCOPES

Students will provide themselves, by purchase, or rental, with a microscope of approved quality and equipment. They may arrange with the Assistant Dean for purchase of microscopes, through the University, upon cash payment or installment plan. Microscopes of suitable type range in cost from \$56 upwards.

COMBINED COURSES IN ARTS AND MEDICINE

Students who are candidates for the degree of Bachelor of Arts, who have successfully completed three years, or 90 credits, of work and have won a fair number of honor points, in the College of Science, Literature, and the Arts, may elect their fourth year in the Medical School and secure the remaining 30 credits and the remaining honor points required for the baccalaureate degree, in that school.

Similarly, students who have completed, with a fair number of honor points, the work of the first two years, or 60 credits, in the College of Science, Literature, and the Arts, may enter The Medical School and upon the successful conclusion of two years' work, with adequate honor points, will receive the degree of Bachelor of Science.

It will be understood that in either of these combined courses the required subjects, viz.: rhetoric, chemistry, zoology, physics and a reading knowledge of German, must be included.

THE CURRICULUM

Within the four years of study in the Medical School, students cover a total of 4,200 hours of required and elective work. These hours are distributed as follows:

Subject	Hours	Subject	Hours
Anatomy	688	Hygiene and Medical Jurisprudence	80
Physiology	416	Medicine	665
Physical Chemistry	96	Surgery	547
or		Obstetrics	206
Organic Chemistry..	160	Pediatrics	102
Pathology	392	Ophthalmology and Oto-Laryngology	88
Bacteriology	168	Electives	592
Pharmacology	160		

With the year 1918, organic chemistry, as well as general chemistry and qualitative analysis, will become a pre-medical requirement and will not be included in the medical curriculum. It is recommended as a preliminary study at the present time, but provision will be made, until that date, for its inclusion in the schedule of the third year. A complete list of required and elective courses will be found under Departmental Statements.

Certain approved courses in animal biology, chemistry, and other subjects taught in the University, outside the Medical School, may be taken as electives by medical students. A list of these courses is given in the semester programs.

The general arrangement of studies is planned for the average student of medicine. The order of studies is not absolutely fixed. As wide a range of individual freedom is permitted as may prove consistent with systematic education. The Committee on Students' Work has authority, within due bounds of sequence of subjects, to adjust a student's program to his particular preparation, needs, and abilities.

MIGRATORY STUDENTS

Students migrating from recognized medical schools will present to the Registrar their official credentials of admission requirements, which must be equivalent to those of this school. They will submit to the Students' Work Committee time and subject credits in medicine. They will present to the head of each department, in which they seek exemption or advanced standing, records of successful examinations. These may be accepted as of full value, or supplemented by review examination, at the discretion of the department. Subject credit, but not time credit will be given for work done other than in a medical school. Special work will be arranged for students taking subject credits.

No advanced standing entitles the student to take two years of any graded study coincidentally.

CLINICAL SERVICE

Attendance upon clinics is required and will be recorded.

Seniors are assigned to clinical clerkships in the University Hospital. As clinical clerks they are under the supervision of senior interns or Teaching Fellows, who will assign them to duty.

For this service the hospital is open from 9:30 a.m. to 12 m. and from 1 p.m. to 4:30 p.m. Clinical clerks will record physical examinations, make and record laboratory investigations, and will attend hospital rounds and general clinics. Patients will be examined by clinical clerks only at the direction of the attending clinician.

EXAMINATIONS

The standing of students is determined by recitations, oral or written examinations, and review of laboratory or clinical note books. Examinations are held at the end of each semester upon the courses closed within that period. Final standings are determined at the close of each semester in conference of the heads of departments with the Students' Work Committee. Reports of such standings are filed in and are announced by the Registrar's office.

A uniform marking system has been adopted for the whole University. Four passing grades, indicated by the symbols *A*, *B*, *C*, and *D*, represent differing degrees of merit. The symbol *E* represents a condition, which may be removed by examination and by such supplementary work as the department imposing it may require. *F* stands for a failure and calls for a repetition of the work in class. *I* stands for incomplete and grants the student further time for the completion of the required work.

CONDITIONS

It is incumbent upon the student to remove a condition at the first opportunity offered. If not so removed it becomes a failure.

Examinations for the removal of conditions and for advanced standing are held at the opening of the school year, from September 19 to 26, 1916. Schedule of examinations may be had upon request.

An opportunity for the removal of first-semester conditions will be given at the Easter recess.

Any student, who, at the end of any given semester, receives grades of *E* or *F* in more than 50 per cent of his registered work in that semester, shall be indefinitely dropped for poor scholarship; such percentage to be estimated upon an actual study-hour basis. Any student so dropped shall not be eligible to condition examination or to reinstatement excepting upon recommendation of the Students' Work Committee and affirmative vote of the Administrative Board.

REQUIREMENTS FOR GRADUATION

Compliance with the admission requirements; the prior attainment of the degree of Bachelor of Arts or Bachelor of Science, to which one year in medicine for the arts degree, and two years in medicine for the science degree, may contribute; the completion of the full four-year period of required and elective work in the Medical School; an approved hospital internship or advanced laboratory work or public health study for one year; and an unimpeachable moral character, are the essentials for graduation.

The required internship insures to the practitioner of medicine a year of varied clinical experience under competent supervision and gives

to the public a greater assurance of efficiency in the graduate. The alternative of advanced laboratory work serves to encourage men and women of training who desire to enter the profession of medical teaching. The alternative of public health study meets a growing demand for trained medical sanitarians.

CLINICAL OPPORTUNITIES

THE UNIVERSITY HOSPITALS

The University is fortunate in the ownership and control of the University Hospital service. The Elliot Memorial Building, the product of a bequest of the estate of the late Dr. and Mrs. A. F. Elliot, supplemented by legislative appropriations, provides a present clinic of 192 beds.

The University Hospital system seeks the highest attainable results in the treatment of patients and the training of students. Its clinical service is closely coöperative with the laboratory departments. Its service is free and patients are admitted only upon the certificate of physicians of the State vouching for the applicant's inability to pay ordinary hospital charges and physician's fees, and stating the clinical character of the case.

A service building provides improved kitchens, dining-rooms, store-rooms and quarters for domestic help.

The Outpatient Department of the University Hospitals is housed in Millard Hall. Its removal to the University campus has been accomplished during the past year. Its service is open to free patients and is conducted by the clinical staff of the Faculty of the Medical School. It is subdivided into medical, surgical, gynecological, obstetrical, children's, eye, ear, nose and throat, skin, genito-urinary, nervous and mental, and orthopedic clinics. It enrolled 13,360 new patients and received 49,124 patients' visits during the past year.

Sections of the senior and junior classes are assigned to these clinics daily and are trained in case-history taking, physical examinations and diagnosis, in prescription writing, and in general therapeutic methods.

AFFILIATED HOSPITALS

The City Hospital of Minneapolis and the City and County Hospital of St. Paul are closely affiliated with the Medical School of the University. One half of their clinical service is under the direction of the Faculty. Attending and consulting staffs are appointed annually upon the recommendation of the Administrative Board of the School.

The combined resources of these two hospitals cover some 1,400 beds. Every phase of clinical service is represented and clinical material is utilized, so far as possible, by the School.

The State Hospital for the Crippled and Deformed, at Phalen Park, invites the Medical School to full participation in its clinical opportuni-

ties. Its superintending surgeon and his aides are members of the faculty. Teaching Fellows and interns of the University Hospital are assigned in rotation to its service. It provides weekly clinics for divisions of the senior class.

LIBRARY

The library of the Medical School consists of the General Library, housed in Millard Hall, and of small collections of books in the departmental libraries of Medicine, Surgery, Obstetrics, Anatomy, and Pathology and Bacteriology. These departmental collections are readily available to students and investigators. The General Library is open from 9 a.m. to 10 p.m. Some 200 current journals are on file; 14,477 bound volumes and 32,859 unbound volumes and monographs, etc., are catalogued.

The libraries of other schools and colleges in the University and of the Hennepin County and Ramsey County Medical Societies are accessible to students of medicine.

PRIZES AND FELLOWSHIPS

The Rollin E. Cutts Prize in Surgery.—Dr. Martha Smith Cutts, '91 medical, established, some years ago, as a memorial to her husband, the late Dr. Rollin E. Cutts, a fund of \$500, the income of which is awarded, in the form of a gold medal, to the member of the senior class of the Medical School who presents the best thesis evidencing original work upon an approved surgical subject.

The Dr. J. W. Bell Prize.—Dr. John W. Bell, Emeritus Professor of Clinical Medicine and Physical Diagnosis, has generously provided an annual prize of \$100, awarded to the student who evidences the highest proficiency in physical diagnosis.

The Shevlin Fellowship.—A fellowship, representing the income of \$10,000, established in the Graduate School by the late Thomas H. Shevlin, is open to candidates for one full year's work in acceptable medical research.

THE SUMMER SESSION

A summer session of six weeks' duration almost immediately follows the commencement exercises in June. The courses in this session are conducted in the laboratories and lecture halls of the Medical School, in the Hospitals and in the Outpatient Department.

The summer session will probably be extended to eight weeks in 1917.

Undergraduates in medicine are admitted in the Summer Session to courses of study offered for the following purposes: (1) to secure advanced standing in degree of the equivalence of these courses to those offered in the regular sessions; (2) to compensate for deficiencies in studies taken in other acceptable schools; (3) to remove conditions or

failures in subjects which are equivalently covered in these courses.

For courses of instruction offered and schedule of tuition fees see Circular of Information of the Summer School.

THE GRADUATE SCHOOL IN MEDICINE

The Graduate School in Medicine has been established as a part of the main Graduate School of the University. It offers to suitably prepared graduates in medicine courses covering two and three years, leading, respectively, to the Degrees of Master of Science and Doctor of Science. The adequate training of specialists in medicine is one of the main purposes of the school and for this purpose, teaching fellowships, under annual stipends, have been created; with an additional number of graduate scholarships, under an abatement of tuition fees, to which selected graduate students receive appointment.

The field of graduate teaching in medicine has been extended to the inclusion of the opportunities for graduate study and medical research offered by the Mayo Foundation for Medical Education and Research, established at Rochester, Minn. Fellows and graduate scholars are assigned to courses of study both at the University and in the Foundation.

Students in the Medical School who have received the Baccalaureate degree from this or any other approved University may become candidates for the degree of Master of Arts, Master of Science, or Doctor of Philosophy in the Graduate School. In addition to the work credited to the M.D. degree, they must pursue courses of study conforming to the regulations of the Graduate School.

Students registered in the Graduate School may elect majors or minors for the graduate degrees, for which advanced courses are provided, in anatomy, embryology, histology, neurology, pathology, bacteriology, and physiology, in the Medical School.

In all cases, students must comply with the rules and regulations of the Graduate School of the University of Minnesota, further information of which may be found in the Announcement of the Graduate School, or in the Circular of Information on graduate work in medicine. Application blanks for teaching fellowships and scholarships may be had upon request.

OPPORTUNITIES OF STUDY FOR PHYSICIANS

Physicians who desire to attend medical lectures and clinics for a limited period of time may obtain a visitor's ticket from the Dean. They may enter for regular lecture courses in the Medical School upon a matriculation fee of \$10. They may arrange for special courses of study in Anatomy, Physiology, Experimental Surgery, Pathology, Bacteriology, Pharmacology, etc., at a fee of \$25 per each full semester's course, with additional charge for material used.

THE SCHOOL FOR NURSES

The School for Nurses is a department of University instruction under the control of the Medical School. It is conducted in connection with the University Hospitals. It is in charge of a Superintendent, assisted by a committee of management and by a teaching staff selected from the Faculty of the Medical School. While the undergraduates of the School for Nurses constitute in part the nursing corps of the University Hospitals, the school exists primarily for the efficient education of the nurse. It is the first school in the United States organized under direct University control.

A four years high-school course is the minimal requirement for admission. A four months' preliminary course in foundational studies is given before entry to the hospital service. The full course covers a period of three years. It leads to the degree of Graduate in Nursing conferred, upon the recommendation of the Faculty, by the Board of Regents.

Nurses in training are received from certain affiliated hospitals for the completion of their courses of study.

For further information, see Bulletin of The School for Nurses.

THE SCHOOL OF EMBALMING

With the coöperation of the State Funeral Directors' Association a School of Embalming has been organized by the University, and is conducted for a period of eight weeks, commencing January 3, 1917. It is under the direction of the Administrative Board of the Medical School.

Didactic and laboratory instruction is given in anatomy, bacteriology, chemistry, public health and sanitation, in autopsies, professional embalming, funeral management, and business principles. Certificates are issued to candidates successfully completing the course and are accepted for state license by the State Board of Health.

Circular of Information will be sent upon application.

THE SOCIAL SERVICE OF THE UNIVERSITY HOSPITALS

A Social Service Department has been established in relation to the hospital system and its outpatient clinics. Its director is engaged in a complete survey of the medical field. In addition to the economic values it will bring the clinical service and the benefits which hospital and dispensary patients will derive from a trained supervision extending to their homes, it will offer opportunities of field work and social study to medical and sociological students.

TABULAR STATEMENT OF STUDIES IN THE MEDICAL SCHOOL

1916-1917

SUBJECTS		HOURS		TOTAL	SUBJECTS		HOURS				TOTAL	
THIRD YEAR		1st Sem.	2nd Sem.	Hours	FOURTH YEAR		1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Hours	
Gross Anatomy..... (3-4)		13	8	336	Neurology..... (Anat. 103)		6	6	..	..	96	
Histology..... (Anat. 101)		10	...	160	Physiology..... (103-104)		8	8	8	8	256	
Embryology..... (Anat. 102)		...	6	96	Special Bacteriology..... (Path. etc.; 105)		9	..	..	..	72	
*Physical Chemistry..... (Chem. 121)		6	...	96	General Pathology..... (101)		..	12	..	..	96	
Physiologic Chemistry..... (Physiol. 102)		...	10	160	Special Pathology..... (102)		..	..	15	14	232	
General Bacteriology..... (Path., etc., 104)		...	6	96	Pharmacology..... (102-104)		..	..	5	5	80	
					Physical Diagnosis, etc..... (Medicine 50)		..	..	2	2	32	
					*Electives.....		6	6	6	6	192	
* Organic Chemistry substituted if not taken pre-medically.					* Elective courses are subject to adjustment by the Stu- dents' Work Committee. The hours are distributed in this schedule on a basis of average assignment.							
Sub-totals.....					Sub-totals.....							35
Third Year, Total Hours.....					Fourth Year, Total Hours.....							1,056

SUBJECTS		HOURS				TOTAL	
FIFTH YEAR	SIXTH YEAR	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Hours	Hours
Pharmacology and Therapeutics. (105)	Therapeutic Conference..... (Pharm. 107)	2	2	2	2	64	16
Clinical Pathology..... (103)	Hygiene (Path., etc., 106-107)	4	4	..	..	64	64
Medicine..... (51 to 55)	Medical Clinic..... (Medicine 63-64)	6	6	5	5	176	64
Nervous and Mental Diseases.. (75-76)	Mouth Infections..... (Medicine 60)	..	1	2	2	40	8
Diseases of Children..... (Pediatrics 81)	Dermatology (Medicine 91)	1	2	2	2	56	16
Principles of Surgery... (53)	Medical Jurisprudence..... (Medicine 62)	2	2	2	1	56	16
General Surgery..... (52)	General Surgery..... (55)	2	2	2	..	48	32
Regional Surgery..... (54)	Urology (Surgery 73)	..	..	3	3	48	16
Surgical Technique..... (51)	Ophthalmology and Otology... (79)	..	..	1	1	16	32
Surgical Diagnostic Clinic..... (57a,b)	Rhinology and Laryngology... (81)	1	1	1	1	32	16
Obstetrics (51-52)	Obstetrics and Gynecology..... (57 to 61)	2	2	2	2	64	80
Gynecology (Obst. 53)	Section Clinics and Clerkships.	2	..	..	..	16	544
Section Clinics.....	Electives	6½	6½	6	6	200	200
Electives		6	7	7	7	216	
Sub-totals.....	Sub-totals.....	34	35	35	32	1,096	
Fifth Year, Total Hours.....	Sixth Year, Total Hours.....						1,104

DEPARTMENTAL STATEMENTS*

THE DEPARTMENT OF ANATOMY

Professors CLARENCE M. JACKSON, JOHN B. JOHNSTON, THOMAS G. LEE, RICHARD E. SCAMMON; Associate Professor CHARLES A. ERDMANN; Instructors WILLIAM F. ALLEN, WALTER E. CAMP, JAY A. MYERS, CHESTER A. STEWART; Assistants WYMAN C. COLE, JOHN A. KITTELSON, JOHN C. MCKINLEY, EDGAR H. NORRIS, LLOYD H. RUTLEDGE, FLORIEN VAUGHN.

Departmental Office, Institute of Anatomy

REQUIRED COURSES

- 1a,b. ELEMENTARY HUMAN ANATOMY. School for Nurses. 48 hours; two credits. KITTELSON.
- 3-4. GROSS HUMAN ANATOMY. Dissection, including osteology. A dissected skeleton loaned to every two students. Every student required to dissect lateral half of the body. Third year medical students; 13 hours a week, first semester; 8 hours a week, second semester. 336 hours; ten credits. JACKSON, ERDMANN, MYERS and Assistants.
- 5-6. GROSS HUMAN ANATOMY. Morphology of the various systems. Osteology. Splanchnology, with special reference to the digestive system. Dissection of the head, neck and trunk. First year dental students. 288 hours; eight credits. JACKSON, ALLEN, ERDMANN and Assistants.
8. HISTOLOGY AND EMBRYOLOGY. Minute structure and development of the tissues and organs. First year dental students. 128 hours; four credits. LEE, CAMP and Assistants.
101. HUMAN HISTOLOGY. Microscopic study of the various tissues and organs. Third year medical students. 160 hours; five credits. SCAMMON, CAMP and Assistants.
102. HUMAN EMBRYOLOGY. Development of the human body. Third year medical students. Prerequisite: Course 101. 96 hours; three credits. LEE, SCAMMON and Assistants.
103. HUMAN NEUROLOGY. A study of the central nervous system and sense organs. Fourth year medical students. Prerequisite: Courses 101, 102. 96 hours; three credits. JOHNSTON, ALLEN, CAMP.

* Courses with number followed by "a,b." are given in each semester. Odd numbers denote first semester, and even numbers second semester courses.

ELECTIVE COURSES

108. **DRAWING FOR PUBLICATION.** Advanced course in methods, principles and technique of drawings intended for publication. Limited to six students. 40 hours; one and one-half credits. WHITNEY.
109. **AUTOPSY ANATOMY.** A study of the gross anatomy of fresh organs obtained at autopsy. Hours and credits to be arranged. CAMP.
111. **ANATOMICAL TECHNIQUE.** Microtechnique, reconstruction and museum methods, etc. Open to fourth, fifth or sixth year medical students. Limited to sixteen students. 96 hours; three credits, or less. LEE, ALLEN.
113. **ADVANCED HISTOLOGY.** A study of special preparations, including practice in the identification of unknown specimens. Open to fourth, fifth or sixth year medical, or graduate students. Limited to sixteen students. Prerequisite: Course 101. 96 hours, three credits, or less. CAMP.
114. **TOPOGRAPHIC ANATOMY.** Based upon a study of serial cross-sections of the human body. Open to fourth, fifth or sixth year medical, or graduate students. Limited to twenty-four students. Prerequisite: Course 3-4. 96 hours, three credits, or less. JACKSON.
115. **FETAL ANATOMY.** Study of the human fetus, with comparison of earlier embryonic and later post-natal structure. Open to fourth, fifth or sixth year medical, or graduate students. Limited to twenty students. Prerequisites: Courses 3-4, 102. 96 hours, three credits, or less. SCAMMON.
117. **IMPLANTATION OF OVUM.** A study of the implantation of the ovum and the formation of the decidua in man and mammals. Open to fourth, fifth or sixth year medical, or graduate students. Limited to twelve students. Prerequisite: Course 102. 96 hours; three credits, or less. LEE.
118. **APPLIED ANATOMY.** Relationships, with reference to their clinical applications. Open to fourth, fifth or sixth year medical, or graduate students. Prerequisite: Course 3-4. 48 hours; one and one-half credits. ERDMANN.
119. **SPECIAL DISSECTIONS.** Dissections of special regions, including preparation of museum specimens. Open to fourth, fifth or sixth year medical, or graduate students. Limited to twenty-four students. Prerequisite: Course 3-4. 96 hours; three credits, or less. ERDMANN.
121. **EXPERIMENTAL NEUROLOGY.** A study of the morphology of the central nervous system as determined by experimental methods. Open to fifth or sixth year medical, or graduate students. Limited to five students. Prerequisite: Course 103. 96 hours; three credits, or less. ALLEN.

- 123-124. **ADVANCED ANATOMY.** Advanced work, largely individual in character, in gross anatomy, histology, or embryology. Open to fourth, fifth or sixth year medical, or graduate students. Admission only upon approval of instructor. Hours and credits to be arranged. JACKSON, LEE, OR SCAMMON.
- 201-202. **RESEARCH IN ANATOMY.** Research work in gross or microscopic anatomy, neurology, histology, or embryology, for properly qualified students, graduates or others, upon approval of any one of the instructors. Hours and credits to be arranged. JACKSON, JOHNSTON, LEE, SCAMMON.
- 203-204. **ANATOMICAL SEMINAR.** Presentation and discussion of research work in progress in the department, together with reviews of current anatomical literature. Open to graduates or others upon approval of instructor. 32 hours; two credits. JACKSON.

THE DEPARTMENT OF PHYSIOLOGY

Professor ELIAS P. LYON; Associate Professors RICHARD OLDING BEARD, FREDERICK H. SCOTT; Assistant Professors JOHN F. MCCLENDON, M. RUSSELL WILCOX; Instructors FRANCIS B. KINGSBURY, CHAUNCEY J. V. PETTIBONE; Assistants EDWARD D. ANDERSON, ROY E. CRUZEN, LYLE J. ROBERTS, ALBERT M. SNELL.

Departmental Office, Millard Hall

REQUIRED COURSES

- 1,2. **HUMAN PHYSIOLOGY AND HYGIENE.** A course in the essentials of human physiology and hygiene, planned to afford teachers a helpful knowledge of the human subject whom they are engaged in teaching. Offered to public school teachers and others. 32 hours; two credits, in each semester. BEARD, LYON and Assistants.
- 3a,b. **ELEMENTARY HUMAN PHYSIOLOGY.** School for Nurses, Home Economics students and others. Prerequisites: elementary biology and chemistry. 96 hours; three credits. BEARD, LYON, SCOTT and Assistants.
4. **ELEMENTARY PHYSIOLOGY.** Sophomore dental students. Prerequisites: elementary biology or anatomy and chemistry. 112 hours; four credits. LYON, BEARD, SCOTT and Assistants.
- 5.* **ELEMENTARY PHYSIOLOGY.** Junior dental students. Prerequisites: elementary biology or anatomy and chemistry. 80 hours; three credits. LYON, BEARD, SCOTT and Assistants.
6. **ELEMENTARY PHYSIOLOGIC CHEMISTRY.** Sophomore dental students.

* Only given in this session, to dental junior students in three years' course.

Prerequisite: organic chemistry. 80 hours; three credits. PETTIBONE, KINGSBURY and Assistants.

- 7.* ELEMENTARY PHYSIOLOGIC CHEMISTRY. Junior dental students. Prerequisite: organic chemistry. 64 hours; two credits. PETTIBONE, KINGSBURY and Assistants.
102. PHYSIOLOGIC CHEMISTRY. The components of the animal body; foods, digestion, the excreta and metabolism. Third year medical students and others. Prerequisite: organic chemistry, one semester. 160 hours; five credits. PETTIBONE, KINGSBURY, McCLENDON and Assistants.
103. PHYSIOLOGY OF MUSCLE, NERVE, BLOOD, CIRCULATION AND DIGESTION. Fourth year medical students and others. Prerequisites: physiologic chemistry (102) and animal biology. 128 hours; four credits. SCOTT, LYON, BEARD, McCLENDON and Assistants.
104. PHYSIOLOGY OF THE NERVOUS SYSTEM AND SPECIAL SENSES; RESPIRATION, METABOLISM, NUTRITION AND EXCRETION. Fourth year medical students and others. Prerequisite: Course 103. 128 hours; four credits. LYON, BEARD, SCOTT, McCLENDON and Assistants.

ELECTIVE COURSES

111. PHYSICAL CHEMISTRY OF CELLS. Osmotic pressure, surface tension and electric conductivity of blood and urine; colloids; permeability of cells and tissues, and changes in permeability produced by electrolytes. Prerequisites: animal biology and two courses in chemistry. 96 hours; three credits. McCLENDON.
112. ELECTRO-PHYSIOLOGY. The bio-electric currents and the theory of stimulation and narcosis. Hydrogen ion concentration and its relation to enzyme activity and irritability. Prerequisites: animal biology and two courses in chemistry. 96 hours; three credits. McCLENDON.
- 113-114. ADVANCED PHYSIOLOGY. Course arranged by instructors with qualified students. Each student will be assigned a topic for special laboratory study, leading in some cases to original investigation. Open to fourth, fifth or sixth year medical students and others. 96 hours; three credits, or more; either or both semesters. LYON, SCOTT, or McCLENDON.
- 115-116. CONFERENCE COURSE IN PHYSIOLOGY; STUDENT SEMINAR. Informal lectures and library study. Topic: first quarter, internal secretion; second quarter, digestion; third quarter, respiration; fourth quarter, nervous system. Prerequisites: Courses 102, 103 and 104. 12 hours, each quarter; one and one-half credits, each semester. LYON or SCOTT.
131. PHYSIOLOGY OF THE BLOOD. Alterations due to physiological conditions. Methods of examination. Open to fourth, fifth or sixth year

medical students. Limited to sixteen students. 48 hours; one and one-half credits. SCOTT.

132. **PHYSIOLOGY OF THE CIRCULATION.** Conference and laboratory work. Open to fourth, fifth or sixth year medical students. Limited to sixteen students. Conference may be taken separately. 12 or 48 hours; three-fourths or one and one-half credits. SCOTT.
137. **FOODS AND PRACTICAL DIETETICS.** A study of human foods and food values; of the principles of food selection; of caloric indices and balanced dietaries. Exercises in the practical preparation of foods. Open to fourth, fifth or sixth year medical students. Limited to twelve students. 40 hours; two credits. BEARD, THOMAS.
138. **PHYSIOLOGY OF DEVELOPMENT.** The physiology of the ovum, the embryo, the fetus; the functions of menstruation, ovulation, pregnancy, parturition and lactation; the functional characteristics of birth, infancy, childhood, adolescence, maturity and old age. Open to fourth, fifth or sixth year medical students. 32 hours; two credits. BEARD.
139. **EXAMINATION OF THE EYE AND EAR.** A study of advanced methods. Lectures, demonstrations and laboratory exercises. Prerequisite: Course 104. Open to fifth or sixth year medical students. 24 hours; one credit. WILCOX.
140. **PHYSIOLOGY OF ACCOMMODATION.** A study of optical principles and methods. Lectures, demonstrations and laboratory exercises. Open to fifth or sixth year medical students. 24 hours; one credit. WILCOX.
- 151-152. **PHYSIOLOGIC CHEMISTRY.** The components of the body, foods, digestion and metabolism. Prerequisite: organic chemistry. Open to qualified students in all divisions of the University. May be taken by medical students in place of Course 102. 96 hours; three credits; in each semester. KINGSBURY and Assistants.
- 153-154. **ADVANCED PHYSIOLOGIC CHEMISTRY.** Course arranged by instructors with qualified students for special work. Open to fourth, fifth or sixth year medical students and others; may be taken in either semester or both. Prerequisite: Course 102. 96 hours; three credits, either semester. PETTIBONE or KINGSBURY.
161. **URINALYSIS.** Advanced methods. Open to fourth, fifth or sixth year medical and other qualified students. First quarter. Prerequisite: physiologic chemistry, course 102. 48 hours; one and one-half credits. PETTIBONE.
163. **METABOLISM.** Special phases of metabolism. Lectures may be taken alone; number of students unlimited; laboratory course limited to ten students. Open to fourth, fifth or sixth year medical students and others. Prerequisite: physiologic chemistry, course 102. 48 hours; three-fourths or one and one-half credits. PETTIBONE.

164. QUANTITATIVE METHODS. The estimation of certain important substances in the urine, blood and other body fluids. Open to fourth, fifth or sixth year medical students. Prerequisite: Course 102. 96 hours; three credits. KINGSBURY.
- 201-202. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. For instructors and advanced students. 16 hours, each semester; one credit. LYON, HIRSCHFELDER and Staff.
- 203-204. RESEARCH IN PHYSIOLOGY. Hours and credits arranged. LYON, SCOTT OR McCLENDON.
- 205-206. RESEARCH IN PHYSIOLOGIC CHEMISTRY. Hours and credits arranged. KINGSBURY OR PETTIBONE.
- 208.* SEMINAR IN PHYSIOLOGIC OPTICS. Primarily for graduate students. Open to sixth year medical students. 24 hours; one and one-half credits. LYON.

* Not given 1916-17.

DEPARTMENT OF PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor E. D. BROWN;
Assistant Professor ROBERT A. HALL.

Departmental Office, Millard Hall

REQUIRED COURSES

- 1a,b. ELEMENTARY PHARMACOLOGY. A study of the history, uses, classification and preparation of drugs; definition of descriptive terms; systems of weights and measures; methods of administration, principles of dosage, etc. School for Nurses and others. 64 hours; three credits. HALL.
4. COURSE IN PHARMACOLOGY. The history, origin, nature, pharmacal preparations, and uses of drugs, including the discussion of their physiologic, pharmacologic, and therapeutic actions. Second year dental students. 32 hours; two credits. HALL.
102. GENERAL PHARMACOLOGY. The principles underlying the structure, physico-chemical properties, physiologic, therapeutic and toxic actions of substances, natural or synthetic, used as medicines. Fourth year medical students. 32 hours; two credits. HIRSCHFELDER, BROWN.
104. EXPERIMENTAL PHARMACOLOGY. Exercises illustrating the preparation and action of medicines, their relation to chemical structure and their mode of administration. Fourth year medical students. 48 hours; one and one-half credits. HIRSCHFELDER, BROWN, HALL.

- 105a,b. GENERAL PHARMACOLOGY AND THERAPEUTICS. A more detailed study of drugs important in clinical practice, covering the relations of chemical structure to physiologic and therapeutic action and modes of application in clinical medicine. Fifth year medical students. 64 hours; three credits. HIRSCHFELDER, BROWN.
107. THERAPEUTIC CONFERENCE. A systematic discussion of selected cases studied from case notes. Sixth year medical students. 16 hours; one credit. HIRSCHFELDER.

ELECTIVE COURSES

6. EXPERIMENTAL PHARMACOLOGY. Experiments upon the effects of the important heart and nerve stimulants, sedatives, purgatives and antiseptics. Offered to dental and pharmacy students and nurses. 24 to 48 hours; one to two credits. HIRSCHFELDER, BROWN, HALL.
- 109a,b. EXPERIMENTAL PHARMACOLOGY. Special investigation and experimental study of one or more subjects in pharmacology, in which the student is given an opportunity of choice of the following topics:
- Anesthetics, general and local; the principles and dangers of anesthesia.
 - Stimulants and depressants of the circulation and their relation to the treatment of heart disease.
 - Drugs acting upon the kidneys, normal or diseased.
 - Urinary antiseptics and the urinary excretion of drugs.
 - Action and detection of poisons and their antidotes.
 - Detailed study of the effects in man of the common harmless drugs.
 - The internal secretions and gland extracts; their effect upon the action of drugs.
 - Action of drugs upon animal and bacterial parasites, tumors, etc. Offered in the second half of the fourth year and in the entire fifth or sixth year. 24 or 48 hours; one or two credits, each semester. HIRSCHFELDER, BROWN, HALL.
110. POISONS. Their detection, actions and antidotes. Open to fourth, fifth or sixth year medical students. 48 hours; one and one-half credits. BROWN, HALL.
- 111a,b. PRESCRIPTION WRITING. The principles of prescription writing; study of the flavoring, coloring and incompatibilities of drugs. Open to fourth, fifth or sixth year medical students. 16 hours; one credit. BROWN.
112. PRACTICAL MATERIA MEDICA AND PRESCRIPTION WRITING. The study of crude drugs, pharmaceutical preparations and of the flavoring and compounding of prescriptions. Open to fourth, fifth and sixth year medical students. 8 hours; one-half credit. BROWN.
- 113a,b. THE PHYSIOLOGICAL AND CHEMICAL BASIS OF PHARMACOLOGY. The relation of drug action to chemical structure; the mode of action and

therapeutic application of various synthetic drugs; the study of chemotherapy. Primarily for students in the School of Chemistry. 80 hours; three credits. HIRSCHFELDER.

201-202. SEMINAR IN PHYSIOLOGY AND PHARMACOLOGY. Reviews of recent literature bearing upon physiologic and pharmacologic subjects. Conducted by department directors, with the collaboration of the staffs and of qualified graduate or undergraduate students. 32 hours.

203-204. RESEARCH IN PHARMACOLOGY. HIRSCHFELDER, BROWN, HALL.

THE DEPARTMENT OF PATHOLOGY, BACTERIOLOGY, AND PUBLIC HEALTH

Professor HAROLD E. ROBERTSON; Associate Professors ELEXIOUS T. BELL, WINFORD P. LARSON; Assistant Professor MOSES BARRON; Professorial Lecturer HENRY M. BRACKEN; Instructors ANNE G. BENTON, ARTHUR T. HENRICI, WILLIAM C. JOHNSON, ALBERT C. POTTER, MARGARET WARWICK; Assistants W. RAY SHANNON, KANO IKEDA.

Departmental Office, Institute of Public Health and Pathology

REQUIRED COURSES

- 1a,b. ELEMENTARY BACTERIOLOGY. The principles governing the growth, isolation, and general characters of bacteria; the principles of sterilization and asepsis. School for Nurses. 64 hours; three credits. HENRICI, BENTON.
3. BACTERIOLOGY. The principles which govern the isolation and study of bacteria, with particular attention to the bacteria and other parasites of the mouth and teeth. Brief studies of pathogenic organisms which produce, or appear in rheumatism; their relation to infections of the teeth. Dental students. 48 hours; two credits. HENRICI.
4. PATHOLOGY. The study and recognition of gross and microscopic disease processes. The principles of general pathology with special consideration of diseases peculiar to the mouth and teeth and important in dental practice. Dental students. 48 hours; two credits. ROBERTSON, HENRICI.
- 6a,b. ELEMENTARY BACTERIOLOGY. The principles of general bacteriology and their application to home economics. Studies in the growth of bacteria and in methods of isolation and recognition; the preparation of culture media and effective processes for sterilization. Home economics students and others. Prerequisite: general chemistry, and botany or zoology. 80 hours; three credits. HENRICI, BENTON.

101. **GENERAL PATHOLOGY.** The general principles governing pathologic changes, including disturbances of the circulation and metabolism; inflammation, regeneration and repair; tumor formation. The study and recognition of gross and microscopic lesions. Fourth year medical students. Prerequisite: Course 101, histology. 96 hours; four credits. ROBERTSON, BELL, BARRON.
102. **SPECIAL PATHOLOGY.** Applications of principles to the study of the pathologic processes of infectious diseases, such as diphtheria, typhoid fever, etc.; the special pathology of lesions in various organs, systems of organs and tissues of the body. Fourth year medical students. Prerequisite: Course 101, general pathology. 232 hours; eight credits. ROBERTSON, BELL, BARRON.
103. **CLINICAL PATHOLOGY.** The principles and methods involved in the examination of urine, blood, stomach contents, feces, sputum, exudates and transudates; the relation of pathologic findings to the diagnosis of disease. Fifth year medical students. 64 hours; two credits. JOHNSON and Staff.
104. **GENERAL BACTERIOLOGY.** The preparation of culture media; the morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries. Third year medical students and others. Prerequisites: general chemistry, and botany or zoology. 96 hours; four credits. LARSON, BENTON.
105. **SPECIAL BACTERIOLOGY.** The study of pathogenic bacteria, especially in relation to definite diseases; bacteriological methods in clinical diagnosis; principles of infection and immunity with practical application of serum reactions. Fourth year medical students and others. Prerequisite: Course 104, general bacteriology. 72 hours; three credits. LARSON, BENTON, HENRICI.
- 106-107. **COURSE IN HYGIENE.** Lectures by various experts upon Public Health Administration and Laws; Vital Statistics; Occupational Diseases; Transmissible Diseases; Public Health Laboratory Methods; Epidemiology; Sanitary Engineering; Laboratory Investigations of Water, Sewage and Milk; Insects and Disease; Personal Hygiene; Dental Hygiene; School Hygiene; Infant Mortality; Life Extension; Social Service; Industrial Hygiene. Sixth year medical students. 64 hours; four credits. BRACKEN and associated lecturers.
- 109a,b. **CLINICAL PATHOLOGY.** Practical work in the examination of blood, urine, stomach contents, sputum, etc. Conducted in the Outpatient Department with class sections. Sixth year medical students. 12 hours each quarter. WARWICK.
- 111a,b. **AUTOPSIES.** The technique of performing autopsies, making proper records of same, and the examination of fresh organs removed

from these autopsies. Opportunities afforded to study the observed lesions microscopically. Three or four students called to each post-mortem, excused from regular classes. Preference given to senior students. Each candidate for the degree must have taken part in at least four autopsies. Fifth and sixth year medical students. The Staff.

ELECTIVE COURSES

112. **PATHOLOGIC TECHNIQUE.** General and special methods of preparation of microscopic and gross pathologic specimens; including practice with freezing microtome, celloidin and paraffin embedding methods, general and special stains, preparation of museum specimens, etc. Limited to ten students. Fourth, fifth and sixth year medical students. Prerequisite: Course 101, general pathology. 48 hours; one and one-half credits. ROBERTSON.
114. **ADVANCED BACTERIOLOGY.** An advanced course giving additional work in bacteriology and the opportunity of working out special problems. Fifth year medical students. Limited to ten students. 48 hours; one and one-half credits. LARSON.
- 115a,b. **COURSE IN IMMUNITY.** The study of natural and acquired immunity; including experiments to show the several types of protective substances and the principles and technique of serum diagnosis. Fifth or sixth year medical students. Limited to ten students in each semester. 48 hours; one and one-half credits. LARSON.
117. **DIAGNOSIS OF TUMORS.** Rapid diagnosis and study of tumors and other pathologic conditions simulating tumor formation. Fifth and sixth year medical students. Prerequisite: Course 102, special pathology. 48 hours; one and one-half credits. BELL.
118. **GYNCOLOGICAL PATHOLOGY.** The special study of pathologic conditions found in the female genital tract. This elective is an integral part of Course 102, special pathology. Fourth, fifth or sixth year medical students. 48 hours; one and one-half credits. BELL, ADAIR.
120. **NEUROPATHOLOGY.** The special study of pathologic conditions of the nerve tissues in lesions of the central and peripheral nervous system. This elective is an integral part of Course 102, special pathology. Fourth, fifth or sixth year medical students. 24 hours. BELL AND HAMILTON.
121. **CLINICAL LABORATORY COURSE.** Practical diagnostic study in the outpatient department laboratory. Limited to sections of four students. Fifth or sixth year medical. 18 hours; one-half credit. WARWICK.
122. **MEDICAL ENTOMOLOGY.** A study of those insects, and their near relatives, which are disease-bearers or parasites of man; life-history, habits and methods of control. Fourth, fifth or sixth year students.

Prerequisite: animal biology, Course 3-4, or equivalent. 32 hours; two credits. HOWARD.

124. HEMATOLOGY. Advanced studies in diseases of the blood; with particular attention to special technical procedures and the significance of laboratory findings. Fifth or sixth year medical students. 48 hours; one and one-half credits. JOHNSON.
- 201-202. RESEARCH. Graduate students, of the necessary preliminary training, may elect research, either as majors or minors, in pathology or bacteriology. Hours and credits to be arranged. ROBERTSON, BELL, LARSON.

THE DEPARTMENT OF SURGERY

Professors JAMES E. MOORE, ARTHUR J. GILLETTE; Associate Professors J. FRANK CORBETT, ARTHUR A. LAW, ARCHIBALD MACLAREN, ARTHUR T. MANN, JOHN T. ROGERS; Assistant Professors ALEXANDER R. COLVIN, WARREN A. DENNIS, EMIL S. GEIST, OSCAR OWRE, HARRY P. RITCHIE, ARTHUR C. STRACHAUER, FRANKLIN R. WRIGHT; Instructors JOHN S. ABBOTT, PAUL F. BROWN, CARL C. CHATTERTON, WALLACE COLE, EARLE R. HARE, JAMES A. JOHNSON, FREDERICK H. POPPE, CHARLES A. REED, HARRY B. ZIMMERMAN; Assistants WILLIAM C. CARROLL, EUGENE K. GREEN, CHARLES A. HALLBERG, JOHN P. HIEBERT, WALTER J. KREMER, HENRY C. STUHR, ANTON J. WETHALL; Teaching Fellows DONALD F. CAMERON, GOLDER L. McWHORTER.

Departmental Office, Millard Hall

REQUIRED COURSES

50. SURGICAL TECHNIQUE. A course in operative principles. Lectures and demonstrations. Fifth year. 16 hours. HARE.
51. GENERAL SURGERY. The diseases and injuries of tendons, fasciae, bursae, blood-vessels, nerves, brain and meninges. Lectures and demonstrations. Fifth year. 32 hours. LAW.
52. SURGICAL QUIZ. For fifth year students. 16 hours. MOORE.
- 53-54. PRINCIPLES OF SURGERY. A study of surgical inflammations, etc.; illustrated by gross and microscopic preparations from the living subject and from experimental courses. Lectures and demonstrations. Fifth year. 56 hours. CORBETT.
56. REGIONAL SURGERY. The practical surgery of the several regions of the body; diseases of bones, injuries and acute diseases of joints, etc. Lectures and demonstrations. Fifth year. 48 hours. MOORE.

58. GENERAL SURGERY. Fractures and dislocations. Lectures and demonstrations. Sixth year. 32 hours. LAW.
- 59-60. DIAGNOSTIC CLINIC. A series of clinics upon the diagnosis of surgical conditions as presented in the hospital wards. Fifth year. 32 hours. MOORE.
- 61-62. DIAGNOSTIC AND OPERATIVE CLINIC. A course in operative procedure conducted at the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul, on Thursdays and Saturdays, throughout the year. Fifth year class, in sections. 56 hours. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, COLVIN.
- 63a,b. CLINICAL CLERKSHIPS. Direct observation of patients in hospital, under supervision of senior internes or teaching fellows; taking and recording of case histories and making of provisional diagnoses. Sixth year. 64 hours, each quarter. Clinical Staff.
- 64a,b. OPERATIVE CLINIC. A course of operations in the University Hospitals, the Minneapolis City Hospital, and the City and County Hospital at St. Paul, on Tuesdays, Thursdays, and Saturdays. For sections of class: sixth year. 48 hours. MOORE, LAW, MACLAREN, RITCHIE, STRACHAUER, MANN, POPPE, ROGERS, COLVIN.
- 65a,b. MINOR OPERATIVE CLINICS. Courses conducted with class sections on three days in each week at the Out-patient Department. Sixth year. 12 hours. STRACHAUER, HARE and Assistants.

ELECTIVE COURSES

- 101a,b. COURSE IN MINOR SURGERY. The study of diagnosis and treatment of selected cases. Sixth year. 36 hours. STRACHAUER, HARE, and Assistants.
103. OPERATIVE COURSE ON THE CADAVER. The technique of abdominal incision and closure; of bowel suturing, appendiceal removal, kidney exploration, nephrotomy, tracheotomy, amputations, ligations, and other problems in emergency surgery. Fifth year. 32 hours. CORBETT.
- 104a,b. SURGICAL PROBLEMS. A study of approved problems, selected by students in the course, in operative, physiological, histological, and chemical methods. Fifth year. 24 hours, or more. CORBETT.
106. COURSE IN TUMORS. The pathology and diagnosis of tumors, classified by anatomical relation. Sixth year. 24 hours. CORBETT.
108. COURSE IN EXPERIMENTAL SURGERY. A study of surgical technique by cardinal operations upon animals. Sixth year. 40 hours. CORBETT.
- 109a,b. DIAGNOSTIC CLINIC, WITH OCCASIONAL OPERATIONS. Conducted at

the City and County Hospital, St. Paul. Limited to ten students. Fifth or sixth year. 12 hours. COLVIN.

110. LOCAL ANESTHESIA. Methods and applications of local anesthesia in both major and minor surgery. Fifth and sixth year. 8 hours. STRACHAUER.

111. EXTRACTION OF TEETH. Course offered in the College of Dentistry. Limited to eight students. Fifth or sixth year. 8 hours. GRIFFITH.

112. SURGICAL QUIZ. A review of surgical studies by recitation and conference. Sixth year. 16 hours. MANN.

119-120. BEDSIDE SURGICAL CLINIC. Limited to four students. Repeated each quarter in the sixth year. 8 hours. MOORE.

122. MEDICAL ETHICS AND ECONOMICS. Offered to students in the fourth quarter of the sixth year. 8 hours. MOORE.

DIVISION OF ORTHOPEDIA

REQUIRED COURSES

70a,b. ORTHOPEDIC SURGERY. A course of clinical lectures and operations conducted in each quarter, with divisions of class, at the Hospital for Crippled and Deformed at Phalen Park. Sixth year. 24 hours. GILLETTE, CHATTERTON.

71a,b. ORTHOPEDIC CLINIC. A study of cases of orthopedic disease and treatment at the Out-patient Department; with class sections, three weekly sessions. Sixth year. 8 hours. GEIST, REED, COLE.

ELECTIVE COURSES

113a,b. CLINIC IN ORTHOPEDIC SURGERY. The study of selected cases. Conducted in Out-patient Department. Limited to three students. Sixth year. 36 hours. GEIST, REED.

114. ORTHOPEDIC SURGERY. Illustrated clinical lectures. Sixth year. 24 hours. GEIST.

115a,b. CLINIC IN ORTHOPEDIC SURGERY. Conducted at Phalen Park Hospital for the Crippled and Deformed. 24 hours in each semester. COLE.

DIVISION OF UROLOGY

REQUIRED COURSES

73. GENITO-URINARY DISEASES. The etiology, diagnosis, and treatment of this group of diseases. A course of lectures. Sixth year. 16 hours. WRIGHT.

- 75a,b. GENITO-URINARY CLINIC. The study of cases at the bedside and in the operating rooms of the several hospitals. Sixth year. 8 hours. WRIGHT, OWRE, FREEMAN.
- 77a,b. GENITO-URINARY CLINIC. The observation, examination, and treatment of patients in the Out-patient Service at three weekly sessions Sixth year. 8 hours. WRIGHT, OWRE and Assistants.

ELECTIVE COURSES

- 117a,b. GENITO-URINARY DISEASES. The study of cases in the Out-patient clinics, giving the student the opportunity of examination and supervised treatment of patients. Sixth year. 36 hours. WRIGHT, OWRE, and Assistants.
- 118a,b. ENDOSCOPY AND CYSTOSCOPY. Methods of investigation and treatment. Conducted in Out-patient Department. Sixth year. 8 hours. WRIGHT.

THE DEPARTMENT OF MEDICINE

Professors LEONARD G. ROWNTREE, ARTHUR S. HAMILTON, S. MARX WHITE, ARTHUR SWEENEY; Research Professor THOMAS B. HARTZELL; Associate Professor JAMES S. GILFILLAN; Assistant Professors ERNEST M. HAMMES, ANGUS W. MORRISON, SOREN P. REES, SAMUEL E. SWEITZER, HENRY L. ULRICH; Lecturer HENRY WIREMAN COOK; Instructors JOHN M. ARMSTRONG, EARNEST L. BAKER, CLIFTON A. BOREEN, JOHN BUTLER, PAUL B. COOK, CHARLES RALPH DRAKE, EDWIN L. GARDNER, ALEXANDER R. HALL, HARRY J. IRVINE, HAROLD PEDERSON, ERNEST T. F. RICHARDS, ROBERT I. RIZER, JOHN P. SCHNEIDER, FREDERICK W. WITTICH; Research Assistant WILLIAM A. GREY; Assistants EDWARD J. ENGBERG, ADOLPH E. LOBERG, JOSEPH C. MICHAELS, HARRY P. NORDLEY, JAMES M. NORTHINGTON, JOHN H. SCHROEDER; Teaching Fellows FLOYD GRAVE, RALPH EDWIN MORRIS, HENRY W. WOLTMANN.

Departmental Office, Millard Hall

REQUIRED COURSES

50. CASE TAKING AND PHYSICAL DIAGNOSIS. A study of general symptomatology; the methods of physical examination, diagnosis and record, with practical training upon the normal and abnormal subject. Fourth year. 32 hours. ROWNTREE, SCHNEIDER and Assistants.
- 51-52. THE PRINCIPLES AND PRACTICE OF MEDICINE. Diseases of the heart and bloodvessels; of the bronchi, lungs and pleura; of the intestinal tract; renal diseases; acute infections. Fifth year. 64 hours. ROWNTREE, WHITE, REES, RICHARDS, RIZER.
- 53a,b. PHYSICAL DIAGNOSIS AND CASE TAKING. Conducted in sections in the clinics of the Out-patient Department. Fifth year; one half the

- class in each semester. 144 hours. SCHNEIDER, RIZER, GARDNER, WIT-
TICH and Assistants.
- 55a,b. PRACTICAL THERAPY AND THERAPEUTIC TECHNIQUE. A study of
special methods of therapeutics. Fifth year; one half the class in
each semester. 16 hours. RICHARDS and Assistants.
- 57a,b. CLINIC IN MEDICINE. Conducted in the University Hospital. Fifth
year; one half the class in each semester. 32 hours. ULRICH.
- 59a,b. SECTION CLINICS IN MEDICINE. Conducted throughout the year in
the Minneapolis City Hospital and the City and County Hospital, St.
Paul. Fifth year. 16 hours. GILFILLAN, REES and Associates.
60. MOUTH INFECTIONS. The typical infections of the oral cavity and
their causal relations to disease. Fourth quarter. Sixth year. 8
hours. HARTZELL.
62. MEDICAL JURISPRUDENCE. The principles of law, the rules of evidence
and the duties of physicians in medico-legal cases. Third quarter.
Sixth year. 16 hours. SWEENEY.
- 63a,b. CLINIC IN MEDICINE. A study of cases and case histories in the
University Hospital service. Sixth year. 64 hours. ROWNTREE,
WHITE.
- 65a,b. CLINICAL CLERKSHIPS. The personal and direct observation of pa-
tients in hospital under the supervision of the staff; the taking and
recording of case histories and the making of provisional diagnoses.
One fourth of class in each quarter. Hospital open for this service
from 9:30 to 12 and 1 to 4:30. Sixth year. 144 hours.
- 67a,b. SECTION CLINICS IN MEDICINE. Conducted throughout the year at
the Minneapolis City Hospital and the City and County Hospital of
St. Paul. Sixth year. 8 hours. GILFILLAN, REES and Associates.

ELECTIVE COURSES

- 101a,b. OUT-PATIENT CLINICS. The advanced study of selected cases in the
outpatient service. Three weekly sessions throughout the year. Lim-
ited to four students. Open to those who have completed their
clinical clerkships. Sixth year. 36 hours. The Staff.
- 103a,b. BEDSIDE CLINICS IN MEDICINE. Conducted at the City and County
Hospital, St. Paul. Limited to ten students. Fifth year. 12 hours.
HALL.
104. THE EXAMINATION FOR LIFE INSURANCE. The requirements of stan-
dard and special examinations of applicants for life insurance. Fifth
or sixth year. 8 hours. COOK.
105. ACUTE INFECTIOUS DISEASES. Non-contagious. A comparative study
of fevers. City Hospital. Limited to six students. Sixth year. 8
hours. REES.
106. DISEASES OF THE RESPIRATORY TRACT. A study of physical signs.
City Hospital. Limited to six students. Fifth year. 8 hours. REES.

- 107a,b. ADVANCED PHYSICAL DIAGNOSIS OF THE CHEST. Practical work on tuberculosis patients at available hospitals. Two classes of six students each. Fifth and sixth year. REES, WITTICH and Associates.
108. ADVANCED WORK IN GRAPHIC RECORDING AND FUNCTIONAL DIAGNOSIS OF CARDIO-VASCULAR DISEASES. A study of the use of the polygraph and electro-cardiograph. Limited to six students. Sixth year. 16 hours. WHITE.
109. PROBLEMS IN ADVANCED MEDICAL DIAGNOSIS. Limited to four students. Sixth year. 16 hours. ULRICH.
110. STUDIES IN METABOLISM, CLINICAL AND EXPERIMENTAL. Limited to six students. Sixth year. 48 hours. ROWNTREE and Staff.

DIVISION OF NERVOUS AND MENTAL DISEASES

REQUIRED COURSES

75. NEUROLOGY AND NEUROLOGIC DIAGNOSIS. The general symptomatology and methods of examination of the nervous system; the etiology, pathology, diagnosis and treatment of the special diseases of the nervous system. Lectures, recitations and lantern demonstrations. Fifth year. 24 hours. HAMILTON, HAMMES.
76. PSYCHIATRY. The principal data and methods of modern psychiatry, with the diagnosis and treatment of the various mental disorders. Lectures, recitations and demonstrations. Prerequisite: Course 75. Fifth year. 16 hours. HAMILTON.
- 77a,b. CLINICAL NEUROLOGY AND PSYCHIATRY. Section clinics in nervous and mental diseases, conducted at the University Hospital, the Minneapolis City Hospital, and the City and County Hospital, St. Paul. Fifth year. 20 hours. HAMILTON, HAMMES, MORRISON, WOLTMANN.
- 79a,b. ADVANCED SECTION CLINICS conducted at the above hospitals throughout the year. Sixth year. 20 hours. HAMILTON, HAMMES.
- 81a,b. PERSONAL OBSERVATION AND STUDY of cases of nervous and mental disease in the University Out-patient Service. In sections. Sixth year. 12 hours. MORRISON, WOLTMANN.

ELECTIVE COURSES

119. PATHOLOGY OF THE NERVOUS SYSTEM. The exhibition of gross and microscopic preparations of diseased nerve tissues; the relations existing between pathologic lesions and signs and symptoms; the chief neurone systems and the principles underlying their degeneration. Limited to four students. Prerequisites: Courses 75 and 76. Sixth year. 8 hours. HAMILTON, WOLTMANN.
121. ORGANIC NERVOUS DISEASES. Advanced diagnosis of nervous diseases, with a view of giving each student practical experience in all

the chief diagnostic procedures employed in the study of nervous diseases. Limited to four students. Prerequisites: Courses 75 and 76. Sixth year. 16 hours. HAMILTON.

122. SYPHILITIC NERVOUS AFFECTIONS. The diagnosis and treatment of the expressions of syphilis in the central nervous system, combining clinical and laboratory teaching and referring particularly to dementia paralytica and tabes dorsalis. Limited to six students. Sixth year. 16 hours. HAMMES.
124. REGIONAL DISEASES. A didactic and clinical conference on the regional diagnosis of lesions of the nervous system. Limited to four students. Third quarter, sixth year. 8 hours. MORRISON.

DIVISION OF DERMATOLOGY

REQUIRED COURSES

91. COURSE IN DERMATOLOGY. A descriptive study of the common skin diseases and of syphilis, including diagnosis and treatment. Lectures and demonstrations. Sixth year. 16 hours. SWEITZER.
- 93a,b. CLINICAL DERMATOLOGY. Section clinics conducted at the Minneapolis City Hospital and the City and County Hospital, St. Paul. Sixth year. 12 hours. SWEITZER, BUTLER, IRVINE, ARMSTRONG, COOK.
- 95a,b. CLINIC IN DERMATOLOGY. The practical study of cases of skin and syphilitic disease, in the Out-patient Service. Sixth year. 12 hours. SWEITZER, BUTLER, IRVINE.

ELECTIVE COURSES

- 137a,b. CLINIC IN DERMATOLOGY. An elective course in the study of selected cases of skin and syphilitic diseases, at the Out-patient Department. Limited to eight students. Sixth year. 36 hours. SWEITZER, BUTLER, IRVINE.
- 139a,b. WARD CLINICS IN DERMATOLOGY. Conducted in the City and County Hospital, St. Paul. Limited to ten students. Fifth or sixth year. 12 hours. ARMSTRONG, COOK.

THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

Professor JENNINGS C. LITZENBERG; Associate Professors JOHN L. ROTHROCK, FRED L. ADAIR; Instructors WILLIAM H. CONDIT, RAE T. LA-VAKE, CLARENCE O. MALAND, JALMAR SIMONS; Assistants L. W. BARRY, JAMES F. HAMMOND, WILLMAR C. RUTHERFORD, FREDERICK J. SOUBA; Teaching Fellow S. E. MOORE.

Departmental Office, Institute of Anatomy

REQUIRED COURSES

- 51a,b. OBSTETRICS. The physiology and pathology of pregnancy, parturition and the puerperium. Lectures and recitations. Fifth year. 64 hours. ADAIR, CONDIT.
53. GYNECOLOGY. Course in gynecologic diagnosis. Fifth year. 16 hours. LITZENBERG.
- 55a,b. CLINICS IN OBSTETRICS AND GYNECOLOGY. Sections of the class at the Minneapolis City Hospital, City and County Hospital, St. Paul. Fifth year. 10 hours. ROTHROCK AND RUTHERFORD; ADAIR AND SIMONS, and Assistants.
- 57a,b. OBSTETRICS. A study of the pathology of pregnancy and parturition and of the puerperium. Sixth year. 32 hours. LITZENBERG.
- 59a,b. GYNECOLOGY. A study of the diseases of women. Sixth year. 32 hours. LITZENBERG.
61. CASE ANALYSIS IN OBSTETRICS AND GYNECOLOGY. A course in the analytical study of cases. Sixth year. 16 hours. LITZENBERG.
- 63a,b. OPERATIVE OBSTETRICS. Operations demonstrated upon the patient and the manikin. Sections. Sixth year. 8 hours. LITZENBERG, CONDIT, LAVAKE.
- 65a,b. CLINIC IN OBSTETRICS AND GYNECOLOGY. Demonstrations, diagnosis, and treatment of cases in the Out-patient Department. Sections of class, sixth year. 12 hours. ADAIR and Assistants.
- 67a,b. CLINICS IN OBSTETRICS AND GYNECOLOGY. Demonstrations, diagnosis and treatment of cases. Conducted in Minneapolis City Hospital and City and County Hospital, St. Paul. Sections of class, sixth year. 24 hours. ROTHROCK, ADAIR, SIMONS and Assistants.
- 69a,b. CLINICAL CLERKSHIPS. The personal and direct observation of patients in hospital, under supervision; the taking and recording of case histories; the making of provisional diagnoses. Sixth year, in sections. 32 hours. LITZENBERG and Associates.
- 71a,b. PARTURITION CLINICS. Conducted in the University Hospital and the Out-patient service, at the Minneapolis City Hospital and the City and County Hospital, St. Paul. Students are on call for parturition cases; attendance required. No credits. Fifth and sixth years. LITZENBERG, ADAIR, SIMONS, LAVAKE and Assistants.

ELECTIVE COURSES

- 101a,b. SEMINAR IN OBSTETRICS. Offering opportunities of advanced study. Limited to eight students. Sixth year. 16 hours. LITZENBERG.
- 103a,b. SEMINAR IN GYNECOLOGY. Offering opportunities in advanced

- study in gynecology. Limited to eight students. Sixth year. 16 hours. LITZENBERG.
- 105a,b. SPECIAL CLINICAL COURSE. A study in the diagnosis and treatment of diseases of women and of obstetrical conditions, at the Out-patient Department. Limited to four students. Sixth year. 36 hours. CONDIT and LAVAKE.
106. OBSTETRIC AND GYNECOLOGIC PATHOLOGY. Limited to six students. Fifth or sixth year. 24 hours. ADAIR.
109. GYNECOLOGICAL CLINIC. A study in the diagnosis and treatment of diseases of women. Conducted in the St. Paul Dispensary. Two students. Sixth year. 16 hours. ROTHROCK.
- 111a,b. CLINIC IN GYNECOLOGY AND OBSTETRICS. Bedside clinic at the Minneapolis City Hospital. Fifth or sixth year. Four students. 12 hours. MALAND.
113. CLINIC IN GYNECOLOGY AND OBSTETRICS. Course same as 111. SIMONS.
115. APPLIED ANATOMY OF THE PELVIS. Fifth year. Eight hours. LAVAKE.

THE DEPARTMENT OF PEDIATRICS

Professor JULIUS PARKER SEDGWICK; Associate Professor WALTER R. RAMSEY; Assistant Professor FREDERIC W. SCHULTZ; Instructors BRONSON CROTHERS, EDGAR J. HUENEKENS, FREDERICK C. RODDA; Assistants WILLIAM D. BEADIE, TOBIAS L. BIRNBERG, JOSEPH A. HEDDING, RALPH T. KNIGHT, HENRY A. LYSNE, CHARLES E. SMITH; Teaching Fellow ROOD TAYLOR.

Departmental Office, Millard Hall

REQUIRED COURSES

- 101-102 DISEASES OF CHILDREN. The etiology, pathology, diagnosis and treatment of diseases peculiar to, or distinctive in children, with particular emphasis upon their differences from adult types. Fifth year. 56 hours. SEDGWICK, RAMSEY.
- 102a,b. CLINIC IN PEDIATRICS. Conducted at the University Hospitals, the Minneapolis City Hospitals, Lymanhurst, and the City and County Hospital, St. Paul. Sections of class, fifth year. 16 hours. SEDGWICK, SCHULTZ, RAMSEY, HUENEKENS, RODDA.
- 103a,b CLINIC IN CONTAGIOUS DISEASES. Conducted in the Minneapolis City Hospital and the City and County Hospital, St. Paul. Sections of class, fifth year. 16 hours. RAMSEY, HUENEKENS, RODDA and Assistants.
- 104a,b CLINIC IN PEDIATRICS. An advanced clinical course, conducted at

the University Hospital and affiliated hospitals. Sections of class, sixth year. 8 hours. SEDGWICK, RAMSEY, SCHLUTZ, RODDA, HUENEKENS, TAYLOR.

- 105a,b. OUT-PATIENT PEDIATRIC CLINIC. The practical study of the diseases of children in the Out-patient service. Sections of class, sixth year. 12 hours. SCHLUTZ, HUENEKENS, TAYLOR and Assistants.

ELECTIVE COURSES

111. DISEASES OF THE NEW-BORN. The pathology and treatment of these disorders, with the presentation of illustrative cases. Limited to six students. Fifth or sixth year. 16 hours. SEDGWICK, TAYLOR.
112. NERVOUS DISEASES OF CHILDREN. The functional nervous disorders of childhood, with the observation and practice of electrical reactions in normal and abnormal children. Limited to six students. Fifth or sixth year. 16 hours. SEDGWICK.
113. CONTAGIOUS DISEASES. The advanced study of contagious diseases, including the practice of intubation and tracheotomy, with training upon the cadaver. Fifth or sixth year. 16 hours. RAMSEY.
114. COURSE IN INFANT FEEDING. Conducted at the St. Paul Baby Welfare Clinic of the H. Amherst Wilder Charity. Sixth year. 24 hours. RAMSEY.
- 115a,b. THEORY AND PRACTICE OF INFANT FEEDING, INCLUDING DISEASES OF THE GASTRO-INTESTINAL TRACT. Limited to six students. In first three quarters, sixth year; in fourth quarter, fifth year. 8 hours. SCHLUTZ.
- 117a,b. CONGENITAL DEFECTS AND CONSTITUTIONAL DISORDERS OF INFANCY AND CHILDHOOD. Limited to six students. In each quarter. Fifth or sixth year. 8 hours. SCHLUTZ.
- 119a,b. INFANT FEEDING. A course of study conducted at the Pillsbury Settlement House. Limited to four students. Sixth year. 8 hours. HUENEKENS.
- 121a,b. PEDIATRIC CLINIC, OUT-PATIENT DEPARTMENT. Limited to six students. Fifth or sixth year. 36 hours. HUENEKENS, SCHLUTZ, RODDA, TAYLOR.
123. SYPHILIS IN CHILDREN. Conducted at the Out-patient Department and at the University Hospital. Limited to four students. Fifth or sixth year. 8 hours. SEDGWICK, TAYLOR.
- 125a,b. CLINIC IN CONTAGIOUS DISEASES. Conducted at the Minneapolis City Hospital. Limited to four students. Sixth year. 16 hours. SCHLUTZ.
- 127a,b. CLINIC IN CONTAGIOUS DISEASES. Conducted at the City and County Hospital. St. Paul. Limited to ten students. Course re-

peated in each quarter. Fifth or sixth year. 12 hours. RAMSEY, BIRNBERG.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Professor FRANK C. TODD; Associate Professor WILLIAM R. MURRAY; Assistant Professors FRANK E. BURCH, JOHN S. MACNIE, HORACE NEWHART; Instructors HOWARD S. CLARK, WILLIAM W. LEWIS, FRED J. PRATT; Assistants CHAS. W. FOGARTY, STANLEY E. KERRICK, JOHN W. LEE, THOMAS J. MALONEY, MARGARET I. SMITH, H. JOURNEAY WELLES; Teaching Fellows HENRY E. BINGER, SAMUEL T. FORSYTHE; Graduate Scholar HENRY J. FRIESEN.

Departmental Office, Millard Hall

REQUIRED COURSES

- 79. OPHTHALMOLOGY AND OTOTOLOGY. Disorders and diseases of the eye and ear and their corrective, medical and surgical treatment. Sixth year. 32 hours. TODD.
- 81. RHINOLOGY AND LARYNGOLOGY. The diagnosis and treatment of diseases of the nose and throat. Sixth year. 16 hours. MURRAY.
- 83a,b. SECTION CLINICS IN EYE, EAR, NOSE, AND THROAT. Diagnostic and operative procedures in the clinics of the University Hospital, the Minneapolis City Hospital, and the City and County Hospital, St. Paul. Sixth year. 28 hours. TODD, BURCH, MURRAY, LEWIS.
- 85a,b. SECTION CLINIC IN DISEASES OF THE EYE. Study and treatment of cases in the Out-patient service, at three weekly sessions. Sixth year. 12 hours. MACNIE, CLARK and Assistants.
- 87a,b. SECTION CLINIC IN DISEASES OF THE EAR. Study and treatment of cases in the Out-patient service, at three weekly sessions. Sixth year. 12 hours. NEWHART and Assistants.
- 89a,b. SECTION CLINIC IN DISEASES OF THE NOSE AND THROAT. Study and treatment of cases in the Out-patient service, at three weekly sessions. Sixth year. 12 hours. MURRAY, PRATT and Assistants.

ELECTIVE COURSES

- 115a,b. CLINIC IN DISEASES OF THE EYE. The examination of patients, diagnosis of disease conditions and supervised treatment. Alternate days, in the Out-patient Department. Sixth year. 36 hours. MACNIE and Assistants.
- 117a,b. CLINIC IN DISEASES OF THE EAR. Studies in examination of cases,

diagnosis, and supervised treatment. Alternate days, at the Out-patient Department. Sixth year. 12 hours. NEWHART and Assistants.

- 119a,b. CLINIC IN DISEASES OF THE NOSE AND THROAT. The examination of patients, diagnosis of disease conditions and supervised treatment. Alternate days, at the Out-patient Department. Sixth year. 24 hours. MURRAY, PRATT and Assistants.
- 121a,b. OPERATIVE CLINICS IN EYE, EAR, NOSE AND THROAT. Conducted at the University Hospital. Course repeated in each quarter. Limited to ten students. Sixth year. 16 hours. TODD, BURCH, PRATT.
123. REFRACTION. A course of lectures. Required of all desiring the practical course 125a,b. Sixth year. 8 hours. BURCH.
- 125a,b. PRACTICAL COURSE IN REFRACTION. Limited to ten students. Prerequisite: Course 123. Sixth year. 36 hours. BURCH, LEE.
126. OPHTHALMOSCOPY. The principles and practice of this method of examination of the eye. Sixth year. 16 hours. MACNIE, PRATT.
- 127a,b. CLINIC IN DISEASES OF THE EYE. City and County Hospital, St. Paul. Limited to ten students. Fifth or sixth year. 36 hours. LEWIS.
- 201-202. SEMINAR IN OPHTHALMOLOGY AND OTO-LARYNGOLOGY. Sixth year. 48 hours. Staff.

THE DEPARTMENT OF SOCIAL SERVICE

Director, MARION A. TEBBETS

ELECTIVE COURSE

101. MEDICAL SOCIAL SERVICE. A study of inter-related physical, social and industrial conditions affecting the individual health and demanding the service of the physician. The origin and purpose of medical social service. The social factors in household, industrial and communal health. The community's health resources. Special medico-social problems. Lectures and laboratory field work. Limited to ten students. Offered in fifth or sixth year. 48 hours. TEBBETS, BEARD.

THE SCHOOL OF CHEMISTRY

Professor GEORGE B. FRANKFORTER; Assistant Professors IRA H. DERBY, WILLIAM H. HUNTER; Instructor WOLF KRITCHEVSKY.

(Contributing courses to The Medical School.)

- 13-14. MEDICAL ORGANIC CHEMISTRY. An outline of the chemistry of carbon, including the preparation of some of the more important or-

ganic compounds. Special emphasis is laid on the parts of organic chemistry most important in medicine. For third year medical students who have not completed organic chemistry in the pre-medical years. 208 hours; six credits. HUNTER, KRITCHEVSKY and Assistants.

91. PHYSICAL CHEMISTRY. Special attention will be given to those divisions of the subject which have most application in the science of medicine, such as osmosis, colloidal solutions, chemical equilibria, etc. Third year medical students. Two hours lectures; four hours of laboratory work, weekly. 96 hours; four credits. DERBY.

NOTE: For information regarding other available courses in Chemistry, see Bulletin, School of Chemistry.

DEPARTMENT OF PHYSICS

174. RADIOACTIVITY AND ROENTGEN RAYS. Experimental and descriptive lectures and exercises on the radioactive substances and their radiations; discharge of electricity through gases; cathode rays; Roentgen rays. Two lectures and one laboratory period each week during the semester. Primarily for medical students. Fourth, fifth and sixth years. Three credits. 64 hours. KOVARIK.

